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JULY
1941

Industrial FINISHING

Published Monthly in the Interest of Modern Production Finishing

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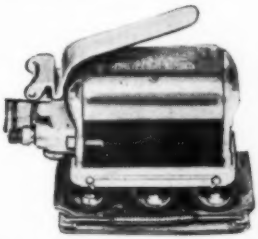

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DEFIED ALCOHOL.. TIME.. MOVING.. *on this* LIQUOR CABINET

Eight years ago this liquor cabinet was given a coat of NR Zaponite Sealer and two coats of NR Zaponite Clear. But you'd never know it was that old or had seen hard treatment.

From the factory it went to a home in Illinois, then moved to a nearby destination. Later it was shipped to Connecticut, where it has had two movings. It received the knocks furniture gets about the house, plus the spilling of beverage alcohol you'd expect in a hospitable home.

But today the finish is full and brilliant, with notable lack of shrinkage. No white alcohol stains mar it. Abrasion resistance has been good, except for a few corners that have been worn off.

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Zaponite Reg. U. S. Pat. Off.

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INDUSTRIAL FINISHES

Seventeenth Year of Publication

Industrial FINISHING

Reg. U. S. Pat. Office

Published Monthly in the Interest of Modern Production Finishing

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Letters from Readers...

OF INDUSTRIAL FINISHING

These letters (and many others) were answered recently by the editorial department, but are published here to reveal certain interesting trends of desire and activity in the industry, and to encourage additional inquiries, comments and suggestions. Further information about any of them can be obtained by writing this office.—Editor.

Waterproofing for Wood Fish Bait

Can you give us the names of manufacturers or any information on waterproofing materials for use in the manufacture of fishing baits?—W. B. Co. (Bait Co.).

Aluminum Enamel

We are desirous of securing information on an aluminum enamel manufactured by Sutpin Co. or Sutkins, or some name similar to this. We wonder if you can be of any assistance to us in identifying the manufacturers' name and any other information regarding this product?—C. R. Co.

We cannot find any finish manufacturing company whose name is even similar to this. Nearest thing we can find is Suydam Co., Pittsburgh, Penna. Can some reader answer this?—Ed.

Paint for Rubber Sheets

I am informed by the Canadian Industries, Ltd., that you are publishers of a monthly magazine INDUSTRIAL FINISHING, and that you could possibly furnish me the names and addresses of manufacturers of a special rubber paint.

The problem is to protect sheets of plain soft rubber, natural grey color, size each 4x8-ft. by 1/16-in. thick, to protect them from becoming too dry from variations of temperature, as they make part of a device used indoors. However, the paint should not affect the elasticity of the rubber. In other words we want to preserve the natural state of soft rubber and the color as the decorative item on the visible side of the sheet. The other side should also be protected and the question is to know if color-paint would be recommended on both sides, or if another product would be advisable.

You would oblige us very much if you were good enough to get us in touch with a manufacturer of rubber paints of the type as referred to above. —A. C. (Canada).

Flock Finishes

Would you please send me material regarding flock materials and adhesives, particularly with regard to lettering on uniforms and textiles and display work?—M. C.

We are referring your inquiry to leading manufcturers of flock and flock adhesives. Also, we are sending you tear sheets of articles published on the subject in INDUSTRIAL FINISHING Magazine.—Ed.

Who Makes "Clevo"

We are interested in securing the name of the paint manufacturer who makes a heat-reflecting and waterproof roofing paint under the trademark of "Clevo". We are quite sure that the manufacturer is in Cleveland,

The last word in new finishes!

VINDOLAC

Heavier bodied—Tougher
Smoother flow
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LIQUOR PROOF
A full 27% solids—
Licensed, guaranteed

Order five gallons NOW, and if **VINDOLAC** is not all we claim for it, just tell us and full credit will be given.

V. J. DOLAN & CO., INC.

Manufacturers of "Unquestionable Quality" Industrial Finishes

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when it's attached to a piece of furniture, the prospective buyer has a definite guarantee that the finish is Liquorproof and Waterproof. In addition, PERFECTION FLAT FINISHES are also impervious to milk, rancid butter and grease, urea, etc.

Panels coated with Perfection Flat Varnish can be immersed in water for 30 days without turning white or showing any other ill effects. Write us and we'll send panels and samples—and also a panel in water for 30-day immersion test.

PERFECTION FLAT FINISHES contain no stearates or other flattening agents. They are made 100% from gum, hence are as clear as gloss varnish—entirely free from milky appearance of conventional flat varnish.

Also, PERFECTION SEALER VARNISH covers 65% more surface than lacquer sealers—try them today.

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- **Now in successful production use by leading manufacturers in place of aluminum and other restricted finishes.**
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- **United Defender Enamels air dry overnight with outstanding qualities similar to *Flo-Bak*.**

Further information and samples sent on request.

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A good product plus a SEA-LAC Finish is a winning combination that pays off in increased sales. Your sales will finish up front when you specify a SEA-LAC Finish. There is a SEA-LAC Finish to meet your special requirements. Ask for samples or submit several items to be finished and returned to you. No obligation, of course.

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DURALAC CHEMICAL CORP.: 92 Lister Ave., Newark, N. J.

Ohio, but the numerous directories we have here do not seem to clear the picture. Do you have any way of getting this information? If you have, we will be very grateful if you will write us in this regard.—K. Co. (Ranges, Furnaces, Heaters).

We don't find "Clevo" in our directories, either. Can some reader tell us about this?—Ed.

Wood Graining

I would appreciate information on equipment needed for a program in transfer of mahogany or walnut graining from the wood to metal, such as metal desks, etc.—L. M. (Kansas State College).

Machine to Apply Water Paints

Will you please give us the address of the Chambers Co. who, we understand, manufacture a machine for applying water paints on industrial finishes?—W. X. (Waterpaints).

We know of no Chambers Co. that manufactures a machine for applying water paints. We wonder if you have in mind the Norris Painting Machine which is now sold by Jas. H. Matthews & Co., 3942 Forbes St., Pittsburgh, Penna.? If you are not familiar with this machine we suggest you write the company about it.

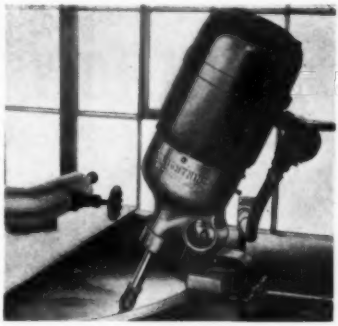
We assume that you are familiar with the various manufacturers of spray painting equipment which is used so extensively in the application of all kinds of paints, varnishes, lacquers and other finishing materials.—Ed.

Infra-Red Gas Burner

On page 95 of June, 1941, issue of INDUSTRIAL FINISHING, there is an item on "Infra-Red Heat From New Gas Burner." We are interested in obtaining additional information on the infra-red referred to in this paragraph. Could you refer us to the firm, or better still have them get in touch with us?—W. C. Co. (Finishers).

On page 95 of the June issue of INDUSTRIAL FINISHING, you have an article on "Infra-Red Heat from New Gas Burner." We are interested in this process and would like to have some additional information about it.

Please write us the name and address of the company using this process so that we may be able to write for the information on Infra-Red Heat



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SERVICE

and the finest line of

COTTON
WOOL
and
RAYON
FLOCKS

for all purposes

CLAREMONT WASTE MFG. CO.

CLAREMONT, N. H.

The country's leading makers

From New Gas Burner, or give us the name of the company, manufacturing this lamp.—L. & P. Co. (Machine & Tool Mfr.).

These gas burners are made and sold by Burdett Mfg. Co., 19 N. Loomis St., Chicago, Ill.—Ed.

Substitute for Aluminum

The article entitled, "Substitution Finishes We May Turn To", which appears in the June issue of INDUSTRIAL FINISHING, has been read with considerable interest. We would appreciate your putting us in touch with one or more concerns who are in a position to furnish a substitute for aluminum powder.—F. P. Co. (Metal Paint).

We are referring you to the author of the article for this information.—Ed.

"Inwood" is Found

Referring to the inquiry about who makes or sells "Inwood", as published in the "Letters" several months ago, I believe your inquirer had in mind Selose Inwood Finish, manufactured by the Inwood Products Corp., San Francisco, Calif. The product is for impregnation into wood, concrete and linoleum. Being an impregnation product, the resultant finish is in the material and not just on the surface, therefore it is purported to last for years and not wear off.—Perry.

Who Makes "Cladite"?

Please identify, and if possible describe, "Cladite" which we understand is an aluminum finish marketed by the Cladite, Inc. of New York. We regret that we have no additional information to offer on this product. —Y. Z. Co.

We understand that there is a company in New York city called Cladite, Inc., 771 First Ave., and that their business is listed in the directory as "Surfacing". We do not find the company listed in our Thomas Register of American Manufacturers, nor do we find the name "Cladite" in our directory of trade names in the paint and varnish industry.—Ed.

Knotty Pine Finish

It is our understanding that there is a material for finishing knotty-pine paneling—a material that can be simply painted on and allowed to stand

(Continued on page 91)

"WHAT DOES IT LOOK LIKE?" Appearance depends on the finish more than on any other one factor, and, therefore, the finish is of paramount importance in making the sale.

Remember this . . . be wise . . . **STILLE-YOUNG LACQUERS, SEALERS, STAINS, ENAMELS, FILLERS** can produce for you the finish that you need.

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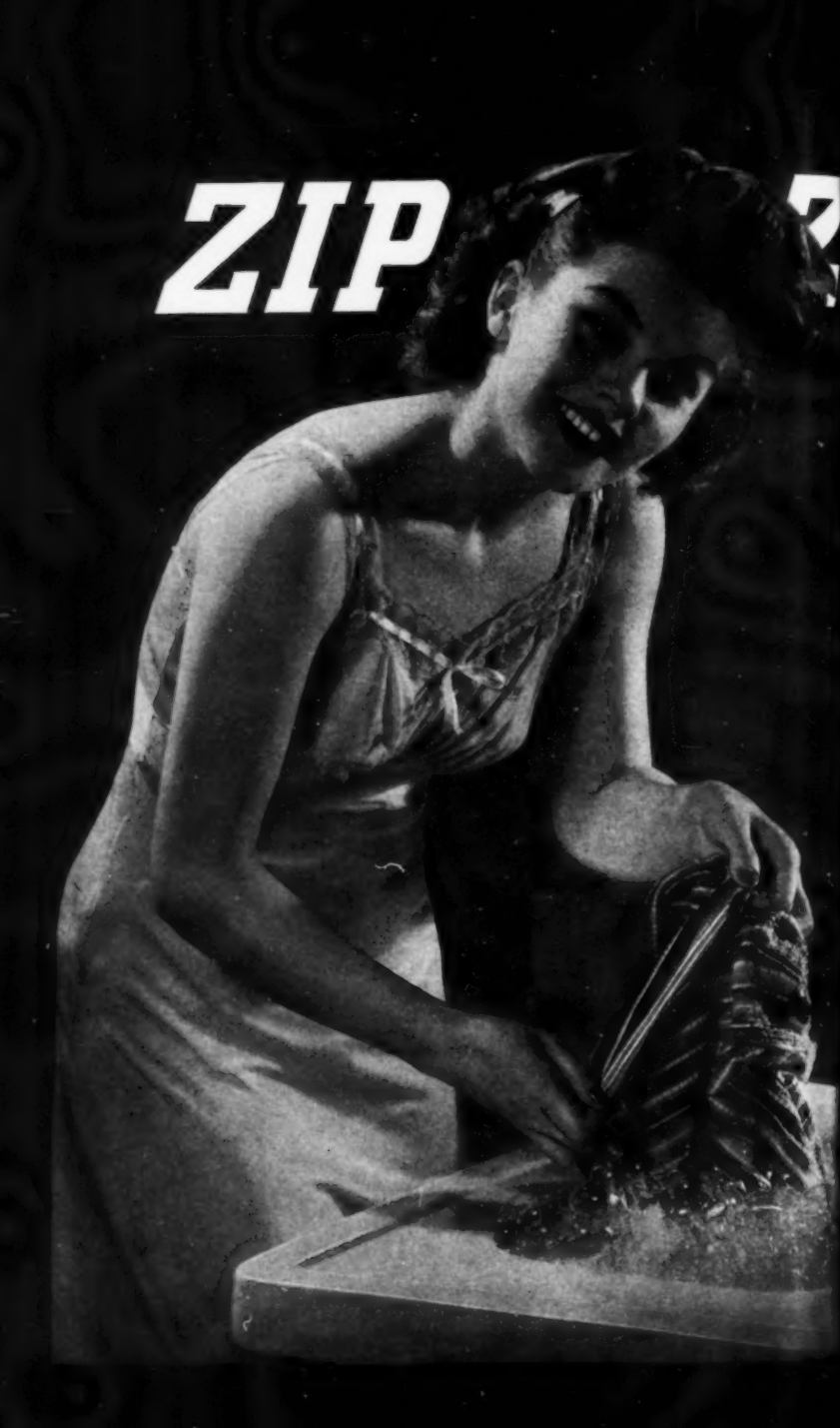

ZIP

ZIP ZIP ZIP!

But Polymerin doesn't wear off!

Extra-tough Finish Protects New Zippers

The amazing durability of Polymerin* enamel finish is ably demonstrated in its application to the new Dain-T-Zip slide fastener. The manufacturers of this ingenious product, the Crown Fastener Division of the Spool Cotton Company, invite women to wash garments freely which are equipped with the Dain-T-Zip zippers.

These sturdy fasteners, finished with Polymerin, not only withstand the constant wear of the slide device, but they are unharmed by continued washings. Polymerin resists washing powders, soaps, and other cleansing agents and its amazingly durable surface is flexible and tough enough to withstand the unremitting wear to which a zipper is subjected.

Polymerin, the original speed-bake finish, is being used with outstanding success to beautify and protect the surfaces of washing machines, refrigerators, kitchen cabinets, vacuum cleaners, Venetian blinds, stoves, lipstick holders, wall sections, heaters, and scores of other products—large and small. Polymerin is remarkably tough. It resists wear. It resists heat. It resists cold. It adds lustre and beauty—sales appeal—to metal products. In addition, Polymerin provides important production advantages!

Speed up with Polymerin! Polymerin's quick baking properties make possible speed production schedules. Baking times are cut from hours to a few minutes! Polymerin is ideal for use with new infra-red setups. Write us for details on how Polymerin can speed up production and increase plant capacities. Ault & Wiborg Corporation, Dept. IFL., 75 Varick Street, New York City.

**Trade Mark Reg. U. S. Pat. Off.*

POLYMERIN

THE ORIGINAL SPEED-BAKE FINISH

How Our Finishers Earn More by Producing More

The author explains how a workable group-incentive wage-payment plan operates profitably and smoothly in the finishing department of a furniture factory.

BY T. RUDD LODER
Cavalier Corporation

MANY PLANS of wage incentives for production workers have been devised and operated satisfactorily to both employer and employe.

The employer seeking a wage incentive to meet the needs of his particular manufacturing enterprise should study and carefully analyze a number of plans, as presented by those men who have specialized in this most important part of production control. Several books are available on the subject.

Fairness on the part of both management and labor is necessary if any plan is to be successful. Tasks have to be set so that a good man working with increased effort will earn a fair premium.

No task should be set which will force the worker to perform at an excessive rate of speed or in a continued nervous or physical strain for a long period of time without the chance for relaxation or rest.

If, in the cycle of the operation, there is not a chance to relax by a change in the position or movements of the body, hands, or eyes, there must be added an allowance to take care of frequent rest periods.

Comparison of Individual and Group Incentives

Any system of wage incentives may be set on each operation or group of operations. The standards set for individual jobs require a more closely studied and planned method. Time studies have to be made on individuals and the necessary allowances added to the base times.

For group incentives, fewer studies have to be made, since we pay for several steps or operations in one group. Allowances have to be larger than for individual incentives, but as each worker in the group shares proportionately, any single error is spread over a number of workers and no small loss or gain greatly affects the earnings of any one worker.

It is necessary to always have the next job ready for the individual worker as soon as the immediate job he is working on is com-

This system is used in our case goods plant. Who developed the plan I do not know, but we picked it up somewhere and have applied it to our needs.—

T. Russell Loder

pleted. One member of a group having completed his part may be able to help another member of his group. This has a tendency to keep all workmen busy and makes for an even flow of production.

The individual worker usually has to know more and do more things than a group worker who may brush stain, wipe filler, sand sealer coats, etc. A worker on individual incentive has an opportunity to excel on his job. He recognizes the greater necessity for the logical sequence of doing correctly the steps of his job which permit him to excel and earn a higher premium. The supervisor can discover more quickly the slow or inefficient worker.

In group incentive, each worker is a part of the whole, and is responsible to all the workers within his group for an honest effort to do his share of the job. Sometimes the fast worker can teach the slower one the way to speed up and at the same time probably increase his own speed enough to offset the loss motions of the slow man until the latter learns to do the job more efficiently. Should the slow man continue to lag and the others in the group, recognizing this, refuse to carry him along, they may request that he be transferred to other work.

Installation of a System

Unquestionably, it is highly desirable that a standard should be set for each operation of each part. This requires a lot of time and expense to put into effect. Then, too, the life of the average suite of furniture is unhappily a very short one. Management may not want to bear the expense of installing and operating a very detailed system. The cost department has to make up costs on each piece for the sales department, in order to establish a selling price. Usually the labor is estimated from past experiences on similar designs.

By enlarging on the data now being recorded on the time cards, much valuable information can be secured and used in setting up an incentive system to be functioning while the time study men use their time checking operations and setting up standards.

Until accurate standards can be set, it is therefore advisable to use a group plan. The natural division of the work permits the use of as

many groups as is deemed necessary. The number of men in a group will vary in proportion to the manner of separating the workers into groups within a department. I would like to explain the method used in our organization, a plant having approximately 400 men on the payroll.

Designating Departmental Operations

The factory is divided into departments which everyone knows by name. By the use of a block of numbers the payroll department can accumulate and charge against the productive run numbers all the labor for each lot in each department. The department then becomes known by its number rather than name; for example, cabinet department, 300; finishing, 400; rubbing, 500; crating, 600. If no further break-down or division is desired, then all the men working in any department charge their time to the department block number and the premium earned by the department is paid each man in proportion to the time he spent on the job. If smaller groups are desired, the department can be separated into the natural division of the work.

Let's take the finishing department: In this group all the work is done to produce the different types of finishing required. In the same lot we may be required to finish part of the cases with a semi-gloss, part with high gloss, while other cases are to be bleached and waxed. On one lot we stain only the gum and get the color required on the veneer in the filler operation. The next lot requires the use of a stain to produce the color. Some cases have veined lines requiring paint; others have carvings to be finished and applied later. The finishing department may be divided into four groups, as follows:

401, Stainers—oil, water, N. G. R., brushers, 2-toners or spraying.

402, Filling—spraying, brushing, wipers, pickers, hand-glazers, highlighting or shading.

403, Sanders — all sanding between coats.

404, Sprays—wash-coating, under-coats or sealers, back-paint, varnish and lacquer.

Rubbing: This operation should be separated from the finishing operations, even though it is in the same department and under the supervision of the same foreman. The time required for rubbing varies with conditions, and in order to have a check on the quality of the goods, a separate allowance is set up. It includes machine and hand rubbing, and polishing.

Until sufficient time studies are made and standards set for each operation, it may be advisable to have the labor charged by detailed group numbers and the payroll department to record it in detail, but pay the premium on the combined labor for the entire department. This will make each group share in the same proportion; otherwise there may be wide variations in a department, one group earning a big premium and another group a very small one. As fast as a department can be studied and separated, the better the results will be.

Methods of Payment

The allowances for the department or the group may be figured in time (minutes or hours) or on a money basis. The procedure is about the same in either case. As to the sharing of this premium, management may: 1) give all the savings to the worker; 2) keep a

percentage (say 50%) to help pay for the expense of the installation and the operation of the system, or; 3) pay the worker the percentage earned on his time put in on the job.

To illustrate, let us assume that the department has a run of 500 No. 9 dressers on which we have set up an allowance of 100 hours. If the workers produce these dressers in 80 hours, the saving will be 20%.

The premium earned under the three methods mentioned is shown in Table I.

Each order completed within a payroll period may be paid for as an individual run in each department, or all runs completed the same period can be accumulated and paid in the same manner.

Three copies of the premium sheets for each group are made each pay period. One copy is retained by the payroll department for posting; one copy goes to the factory superintendent, and one copy to the department for posting on the bulletin board. This sheet is known here as "Foreman's Cost Ticket."

Plan No.	Hours Allowed	Hours Worked	Hours Saved	Premium Hours Paid	Total Paid Hours
1	100	80	20	20	100
2	100	80	20	10	90
3	100	80	20	16	96

Table I—The number of hours for which employes are paid, according to different plans.

Suppose there are only four men in the department. The results of the different plans, according to certain rates of hourly pay per man, are revealed in Table II.

A daily time card is turned in every day by each man. He punches in and out on the time clock and marks up his card to identify the jobs he has worked on and how much time he has spent on each one.

	Base Rate of Pay	Premiums paid each man under Plans 1, 2, 3. Plan No. 1	No. 2	No. 3
Man A, 30-hrs. @ 70c	$21.00	7.5-hrs. $5.25	$2.62	6-hrs. $4.20
Man B, 35-hrs. @ 65c	22.75	8.75-hrs. 5.69	2.85	7-hrs. 4.55
Man C, 10-hrs. @ 45c	4.50	2.50-hrs. 1.13	.57	2-hrs. .90
Man D, 5-hrs. @ 52c	2.60	1.25-hrs. .65	.33	1-hr. .52
Total 80-hrs.	$50.85	20.00-hrs. $12.72	$6.37	16-hrs. $16.17

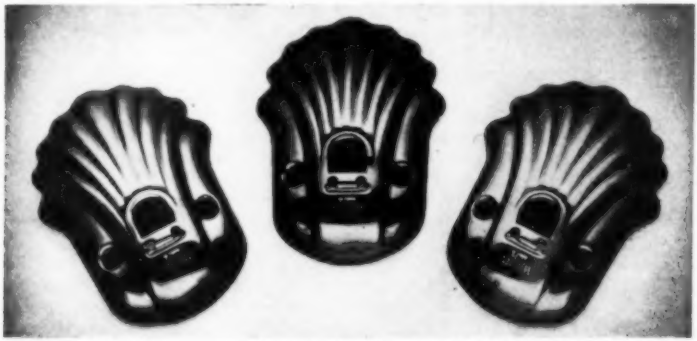
Table II—The hourly base rates and what premiums are earned by different plans.

Under Method No. 1, the 20 hours saved is 25% of the time used, so each man is given 25% additional hours put in on the job.

Under Method No. 2, where the man gets half and management half, the premium is half of No. 1.

Under Method No. 3 the savings is still 20 hours and the premium paid is 20% of the time used, which equals 16 hours. Management keeps the difference, which is four hours.

Wage incentive involves some labor and headaches, but it is very much worthwhile since it becomes another tool in the hands of management for increasing production and lowering costs. Of course, workmen must cooperate with one another and with management in making any plan function satisfactorily and profitably for all concerned.



While these articles appear to be alike in color in the picture, actually one is finished in gun metal, one in bronze and one in bronze and copper. Each one has a top coat of clear lacquer. They are attractive in color and have a high-luster sheen.

Finishing Metal Caskets

BY AL MATLOCK
Foreman Finisher

AMONG the several decorative finishes we use on metal caskets, one line of materials consists of what I would call tinted lacquers, although the manufacturer's literature refers to them as "concentrated transparent enamels". They are available in several colors and, over smooth bare metal, they produce a finish that is about as smooth and lustrous as the chromium plating on your new automobile or electric refrigerator. We use them on bare steel or cast metal parts to give them a plated appearance. In the face of a probable aluminum shortage this type of finish offers attractive possibilities to any user of metallic finishes for decorative effects.

We saw this material advertised in INDUSTRIAL FINISHING some time ago and sent in four plated handles (bronze, copper, gold, and gunmetal) to the manufacturer so that the firm's laboratory could make up colors to match. When these handles were returned I was somewhat surprised to find that one of them was originally finished with sprayed "plating".

* * *

Before coating begins, the metal should be free of rust, dirt and grease. For best results we buff the surface lightly with a wire buffer which gives it a chased effect.

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PITTSBURGH'S Technical Men can offer valuable assistance in the solution of *your* difficult finishing problems. These men work with your own department . . . right in your own plant! And when they recommend a finish, you will *know* that it is correct . . . especially formulated to fit your specific needs.

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Arrange a 5-Day Test run of Pittsburgh Industrial Finishes. If results compare with those of other leading manufacturers, you will speed production, cut down on drying time and wasteful rejects. You'll find, generally, that finishing costs are lower. Our representative would like to call for consultation.

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• Please fill out the attached post-card for your copy of Pittsburgh's valuable new free book, "Industrial Styling With Color," describing in detail Pittsburgh's industrial finishing services. No obligation!

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PITTSBURGH FINISHES

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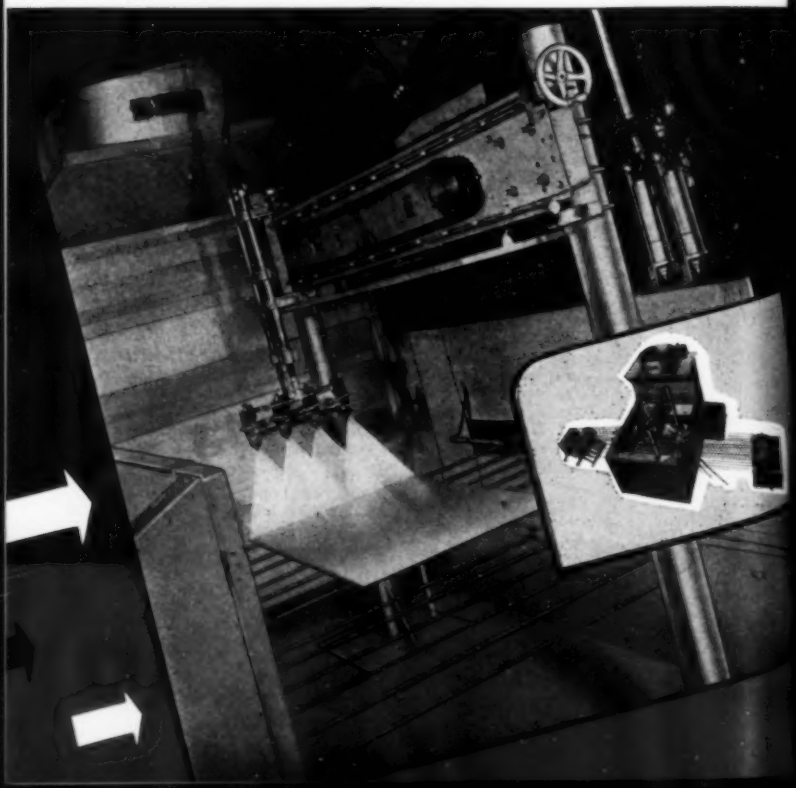
The BINKS Automatic Reciprocating Arm Machine has been called "Almost human, but a lot more efficient." Anyone watching it operate will agree. Its automatic spray guns, synchronized with the endless belt that transports the product to be finished, give complete coverage with great economy of materials and time.



AUTOMATICALLY...

If you have been having trouble keeping abreast of production in the finishing of flatware . . . or if your present method does not give the results you wish, send for a BINKS Engineer today. He will survey your needs and make his proposal without any obligation on your part. A note to the address below will get prompt attention.

To be sure of the best in Spray Painting and Finishing Equipment, remember to ask for BINKS

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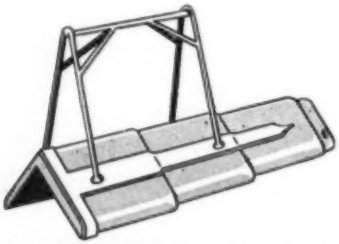
Then the plating is sprayed on until it reaches the desired depth of color.

A little skill must be developed for this. The spray operator usually puts on too much at first, and this makes a dark opaque finish. If the material is put on too heavy the film will lack smoothness. On the other hand, too thin a mixture will cause it to run and gather in spots, causing an unsightly appearance.

After the color coat is dry a clear lacquer top-coat can be added for extra gloss and durability.



A simple metal mask (the part in white) in position over a casket corner to be finished in 2-tone color. The slender structure above is the handle. Most masks for this work are more intricate than this one.

The attractiveness of the finished article depends wholly upon the skill of application and the brightness of the metal reflecting the light rays through the finish.

Two-tone effects may be obtained by masking certain parts of the hardware. For instance take a handle or corner, buff it clean and spray it with this material in copper color. Spray only the parts to be masked later. Now place the mask in position and spray the remainder with a Venetian bronze-powder mixture. After the lacquer top-coat is applied it will resemble a copper high-lighted article. Or, instead of using the bronze powder mix, spray the handle with a bronze color of the tinted lacquer, without a mask, leaving a spot of copper here and there.

For occasional work, tape can be used for masking, but for production work it is better to make permanent masks out of sheet copper. Thin copper can be shaped to fit the work. It should be trimmed and soldered on the back to give it weight and to attach a suitable handle. If the mask is in two or more sections, these sections can be joined with tubing or heavy wire, as shown in the accompanying drawing. When the mask becomes loaded with lacquer it can be easily cleaned with ethyl acetate or lacquer reducer.

Color Selector Offered by Du Pont

A new "Color Selector," designed for use in paint dealers' establishments, is being introduced by Du Pont. It is designed to eliminate guesswork in choosing appropriate shades for home

New paint styling guide, by Du Pont

decoration, affording an "illustrated preview" of both interiors and exteriors.

The selector contains a collection of color photographs of tastefully-decorated rooms and homes, shown in combination with hand-painted color sheets. The photographs differ from usual pictures in that all paintable surfaces are transparent. When placed over specially prepared sheets, they afford an idea of how a room or house will look when painted in the selected color.

COLOR STYLING

AND WHAT IT MEANS TO YOUR PRODUCT

BY NORMAN H. VOIGT

TODAY we see a tremendous industrial upswing caused by defense-program demands. All available skilled labor and material formerly used for producing dies and tools are now being used in armament production. But non-defense products must continue to be made too—and in larger quantities because more people have more money with which to buy them. What will industry do to make its non-defense products up-todate and sales-appealing to the fickle public, without re-designing these products?

This condition offers an unusual opportunity for the finishing industry's color-stylists to enter a new sphere of industrial usefulness. They can show the way to lower production costs by making industrial products both salable and smart through color styling rather than to undergo complete redesigning.

Color-styling is by no means a new art. It is as old as the Egyptian temples with their many colorful motives and expressions. Today, color styling has taken on new meaning and invaded new fields. We must consider the place color and paint have achieved in modern American design. Whether the product is large or small, if it is cleverly styled in color, it can express product performance and promote the urge to buy.

Practical Factors for the Color Stylist to Consider

There are many factors that the color-stylist must consider before beginning the re-styling of a product. I list them under two general headings. namely the *Practical* and the *Psychological.*

Surface characteristics and the service the product is likely to receive will determine largely whether the coating should be a wrinkle, spatter, gloss or semi-flat enamel. If the product is metal, then welding spots, sand holes, defects in rolling, etc., can be covered more economically with rough-textured and semi-smooth finishes (such as wrinkle and spatter) than smooth gloss enamels, since preparation of the surface represents the major portion of finishing costs.

Wrinkle and spatter finishes are varigated in texture and pattern, therefore they effectively hide

minor imperfections and present a non-glare surface which is often desirable for office equipment and instruments in general. Dirt, dust and grease retention of films must be considered important factors in selecting a finish. Heating equipment, kitchen equipment and institutional equipment can be placed in this category. If the product will be placed in direct sunlight then non-fading colors must be used.

Psychological Factors; The Consumer's "Color Mood"

Under this heading we must gauge the consumer's "color-mood" in the particular area in which the product is to be distributed. This factor is often dependent upon climate, environment, etc. Even current events, such as wars, enter into the ultimate choice.

Hemisphere defense and the "Good Neighbor Policy" may produce a composite style picture which will include nearly all the expressions of New World life. We will have traded so many motives that there will be little true national art.

While this magical age of fast communication has melted out sectional style and color fixations into a more or less composite whole, the early settled parts of the country still require some products colored and styled to meet traditional feeling. This is particularly true of furniture.

Optical Effects; Color Combinations

Optical effects have a tremendous influence on salability. Illusions of height, width and depth are accomplished through the careful use of conventional and geometrical decorations and streamlined color areas.

Color sensation is a more elusive factor. Although everyone knows that each primary color arouses different emotions (red for scintillating gayety; orange for warmth; green for restfulness; etc.) few realize how various combinations of these hues can be formed to satisfy both the color mood and the practical needs of the consumer.

The public is becoming more conscious of color and "tone" every day. Color, as in music, must be harmonious. The ear immediately senses a discordant musical note, even when the listener has a limited knowledge of music. The same applies to color, for it is unpleasant to the eye to witness an inharmonious choice of color-combination or a repugnant shade. It has been estimated that the human eye is able to distinguish some 2,000,000 different shades. Many sales have been lost just because the color was slightly off.

A Few Suggestions for Sound Color Styling

While there can be few set laws for effective color styling, the principle of good color design will apply as follows:

Strive for simplicity. Do not attempt to use too many colors.

(Continued on page 26)

"In my daily contact with the trade, I have become aware of the need, both in product manufacturing and in finishing industries, for stylists who can artistically interpret and express, through the practical use of paint and color, our functional manner of living, hence this article." — The Author.

HERE'S GRAPHIC EVIDENCE OF THE SAVINGS ACHIEVED BY MODERNIZING WITH . . .

MAHON

FINISHING EQUIPMENT

TWO Operating Shifts Now Can Do What THREE Did Before

At the Florence Stove Company, Kankakee, Ill., the FINISHING SYSTEM, pictured herewith, was installed as the result of a carefully planned survey conducted by Mahon production experts cooperating with the Florence Stove Company engineers. Work travel, proper type and placement of equipment, were determined only after intensive study. When the system went into operation, it was found that work was so greatly speeded up, savings amounting to 33 1/3% were possible—even in the face of greatly increased production. Have a survey made in your Finishing Department. Mahon engineers may be able to show similar savings for you.

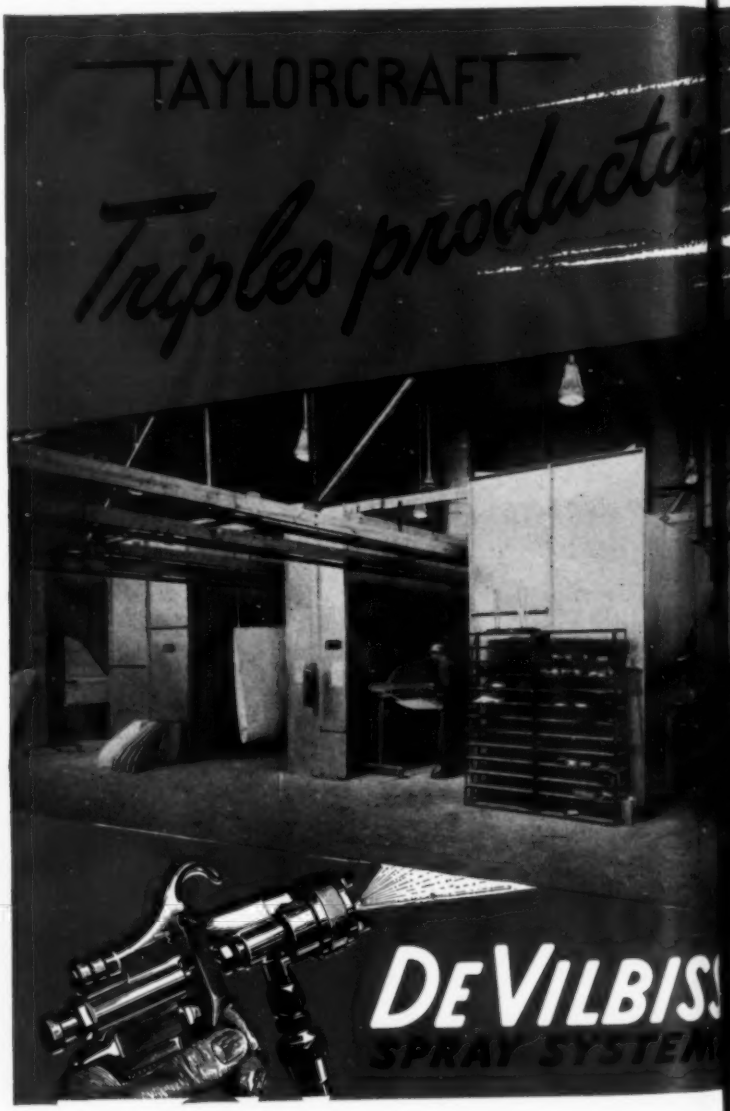
THE R. C. MAHON COMPANY
DETROIT — — CHICAGO

Designers and Manufacturers of Complete Finishing Systems, Metal Cleaning Machines, Rust Proofing Machines, Hydro-Filter Spray Booths, Drying and Baking Ovens, Dust Collectors, Filtered Air Systems and Other Special Production Equipment.

wo Hydro-Filter Spray Booths in the Painting Department. Four al Mahon Spray Booths are located orcelain Department.

This unique Fin-Point conveyor table carries flat stove parts for 97 feet through both Spray Booth and Oven. Spray Booth equipped for reclaiming of porcelain overspray.

MAHON


TAYLORCRAFT
Triples production
DE VILBISS
SPRAY SYSTEM

• Demand for light planes is climbing today like a Taylorcraft De Luxe on the take-off. And Taylorcraft Aviation Company has rebuilt its plant at Alliance, Ohio, to provide three times its former production speed and capacity.

Among other improvements, Taylorcraft installed a modern "dope shop", designed and equipped throughout by DeVilbiss. Four enclosed downdraft waterwash spraying areas handle complete fuselages, wings, tail and control assemblies. A giant conditioning unit delivers filtered and heated air, supplying the exhaust systems and keeping the entire shop under atmospheric pressure to exclude all outside dust.

Every Taylorcraft plane makes seven to eight trips through the "dope shop" for successive paintings. And modern DeVilbiss equipment enables this finishing department to keep pace with tripled output.

DeVilbiss Spray Systems are making outstanding records in many other industries, too. If your product requires painting, coating or finishing of any kind, why not find out for yourself what DeVilbiss can do to help you speed up your production?

THE DEVILBISS COMPANY • TOLEDO, OHIO

Canadian Plant: Windsor, Ontario

Usually two or three colors will be ample for the expression of a product's function and will provide sufficient variety to be appealing to the trade. When more than five colors are used we can expect one or more of them to clash with the product's ultimate background.

If decorative motives are used, they should be conventionalized to suit the product. One can be too literal in the interpretation of reality. In other words, the decoration should serve to arouse the imagination and not place restrictive limits on it by going into intricate detail.

A center of interest should be established by placing important motives on important surfaces.

It is necessary that the ultimate service of the product be considered when choosing a finish that will be practical in every respect.

Endeavor to "Color the surface to reveal the product's purpose."

By the artful use of color we can make this world a brighter place in which to live!

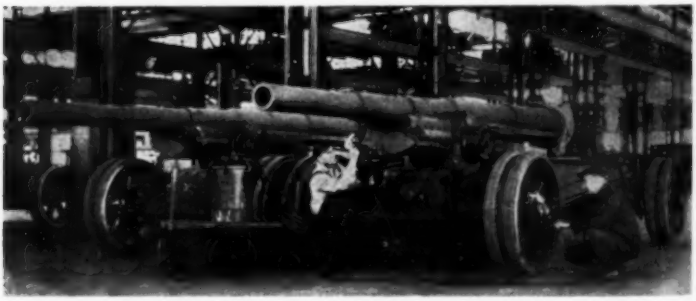
A. D. Crowley, Director of Sales for H. V. Walker Co.

The H. V. Walker Co., Elizabeth, N. J. announces the appointment of A. D. (Al) Crowley as Director of Sales, effective June 1, 1941.

Mr. Crowley has been actively engaged in the paint, varnish and lacquer industry since 1922. Upon his graduation from the University of Dayton, Dayton, Ohio, as a chemical engineer, Mr. Crowley spent nine years in technical development and plant production. For the past ten years Mr. Crowley has devoted his time to industrial sales problems, having been associated with three other prominent manufacturers of finishing materials.

Pedigree Products Blue Book of P. D. George Co. Finishes

A beautiful book containing twelve 8½x11-in. pages, bound in blue and gold covers and printed throughout in two colors, shows reproductions of photographic views taken in the plant of P. D. George Co., St. Louis, Mo. Laboratory and manufacturing operations are shown and explained. The company's line of products is listed, as are also the several industries served by the P. D. George Co. The company has been in existence since 1866.



Spray painting the outside surfaces is an important part of the reconditioning of this artillery which has been carefully stored and preserved since World War I.

While final reconditioning work is being carried on today, the task of keeping the equipment in tip-top shape, down through the 22 years since the end of the last war, was an enormous one. The insides of the gun barrels had to be kept virtually bathed in preservative greases, and the outsides of the barrels were heavily coated with paint to guard against corrosion.

Spray-painting equipment is playing an important role in getting the field pieces back into shape, reassembled and ready for instant action, so they will be in good condition and as effective as they were the day they rolled out of the armament factories over 22 years ago. Photograph, courtesy of the DeVilbiss Co., Toledo, Ohio.

A perfect—

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27% Solids at the Gun!

A Royalty Water White Lacquer that meets the most exacting specifications and requirements.

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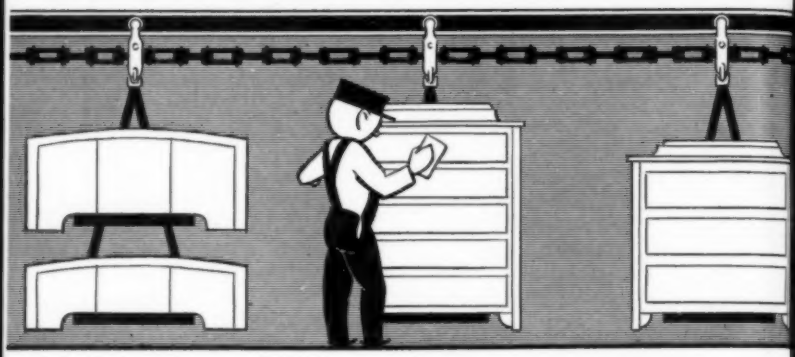


Facts About the Operation of

BY SAUL JACOBSON
Industrial Engineer

THE FINISHING conveyor is becoming almost commonplace, as a tool of production in the modern manufacturing plant. With it the alert and cost-conscious manufacturer can achieve results which frequently far outweigh the expense of a complete installation. It is well established that the conveyor, in conjunction with a force-drying system, invariably shortens the finishing cycle, permits an increase in production without increasing floor space, minimizes unproductive handling and simplifies the problem of production control. And it follows that the foregoing items can be translated into significant dollar savings.

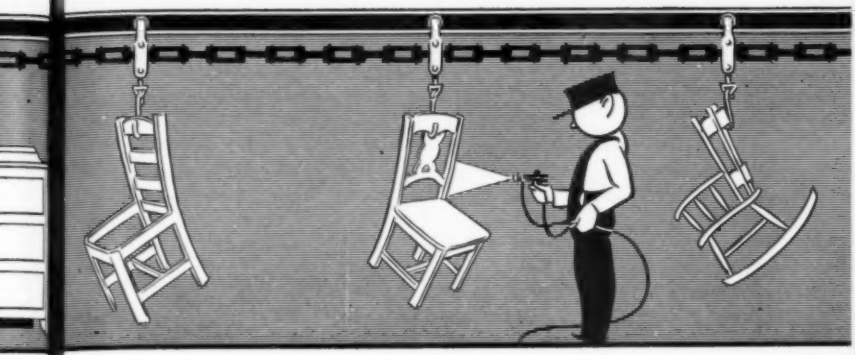
Despite the seemingly obvious advantages of a mechanized system, however, a conveyor setup calls for meticulous control if it is to prove a worthwhile investment. The operating problems posed by installations of this type, if not handled adroitly, can nullify many of their inherent advantages.

This article examines some of the operating aspects of wood-products finishing and is based on experiences and observations in connection with the operation of a conventional chain conveyor finishing system.

The Conveyor As a Work Place

The word conveyor denotes a device for movement of materials by mechanical means—and in most instances a conveyor functions primarily as a transporting mechanism. The performance of operations thereupon is usually a secondary consideration. In the finishing of metal products, for example, while considerable processing is involved, most of it is automatic, the spray operations being the primary manual jobs.

The furniture finishing conveyor, however, represents a departure from the conventional. Aside from its function as a means of move-



on of all Finishing Conveyors

ment, it is the work place for a considerable number of manual operations. Processes like staining, glazing, filling, sealing, sanding, painting, shading and lacquering are customarily performed on the conveyor, and what is more, *while the conveyor moves past the operators.* It is not unusual to have as many as 75 individuals working on one finishing conveyor system.

Obviously, performing operations while the conveyor is in motion has certain inherent advantages, namely, less handling, less damage to product, the pacing value of the conveyor, etc. However, only in certain instances is it the most efficient work place for the variety of jobs performed. These instances are usually limited to spray operations, where the carrying tray is the right height and can be swiveled. Processes like filling, sealer-sanding and painting can frequently be performed more efficiently off the conveyor, particularly when the tray is of the hangar variety and lacks rigidity.

Work stations off the conveyor can be designed for a specific job and can embody labor-saving devises based on good motion practices. Special work-holding devices can be attached, permitting the operator to use both hands for productive effort. It is surprising to find that in many cases, it is less costly to do the work off the conveyor and handle the product than to attempt to perform the job while the piece is moving on the chain.

Synchronization and Balance

One of the most perplexing operation problems, peculiar to the conventional finishing conveyor, is that of synchronization and balance. By that is meant operating the conveyor system at a speed which will give the required production with exactly the proper number of people fully employed at each work station.

If the problem were that of assembling radios or any other product where a straight-line conveyor

system is used, it would present no serious difficulties. A separate assembly line would be set up for each individual model. An initial determination would be made of the number of completed units required of that line each day. Then the whole assembly process would be broken down into a series of successive operations each requiring exactly the same time cycle or a multiple thereof to perform. The conveyor speed would be set to produce the required number of units. Finally, the exact number of operators needed to man the work stations would be brought in to begin the job. Once the line was set up, it would function without change until all the required units were completed. This might be for a period of several weeks or for an entire year.

Different Products Finished on Same Conveyor

Unfortunately, conditions under which the ordinary wood-products finishing conveyor operates are much more difficult to control. Rarely, if ever, is one article processed alone. Generally four or five different products can be found intermingled on the conveyor, all being finished together. Because production runs are usually short, these products are continually changing. If the plant manufactures to order, new orders and new delivery dates keep the volume of goods to be finished in a constant state of flux.

As a result, it is impossible from a single analysis to make a fixed breakdown of the finishing operations and to retain a standard crew. While 40 workers distributed in one fashion might keep the conveyor perfectly in balance one day, the next day's production might require 50 people distributed differently to handle a varying quantity of other models.

Hence, in place of the fixed condition on the normal assembly line, we have an ever changing dynamic situation calling for continuous rebalancing and resynchronization. Complete balance, of course, is very difficult to achieve under these conditions. However, it can be approached, although it will require constant attention.

Flexible Conveyor Construction

The task of organizing operations in the face of all sorts of uncertainties and variables, first of all, calls for extreme flexibility in the conveyor system itself. Too often conveyors are designed around a specific processing system without thought to future changes in finishing requirements —and subsequently they are found to be unsuitable for new work.

Conveyor construction also calls for sufficient flexibility to permit the full utilization of labor at all times. That is, in addition to providing free working space to take care of new operations, which may vary from year to year, the layout should be designed so that the location of work areas allows for constant interchangeability of operators. For example, space permitting, a conveyor system might be planned so that certain spray booths are adjacent. Then, if there is too much work for one operator at each booth, a third spray man can divide his time between both work stations. Similarly, manual work stations can be laid out so that in the event of an overload at one point and an underload at another, operators can work between the two points without much trouble.

Recognize the limitations of your system. Some parts and products

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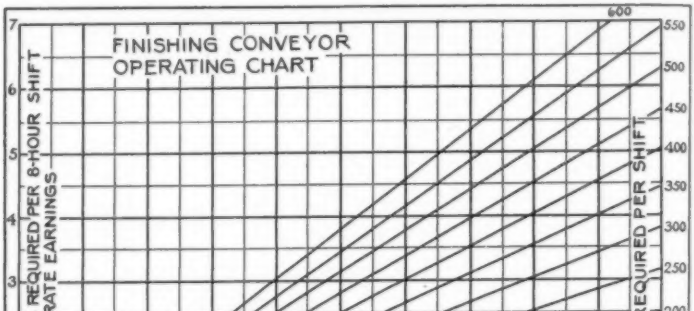


Chart by which you can determine how many men to place at work on conveyor stations.

can be processed more economically off the conveyor. To allow for this, there should be sufficient floor space in the vicinity of productive sections of the conveyor where auxiliary benches, spray booths or special processing equipment can be utilized.

Conveyor Operating Data

Even with a flexible conveyor, the problem of operating with the correct size of crew persists at all times. Too often the foreman has a tendency to load the line with more men than are needed to do the job. Regardless of the method of wage payment used, whether day work or group incentive, the practice invariably costs the company money.

A partial solution to the difficulty lies in equipping the finishing foreman with facts and information to supplement and guide his own judgment, which might otherwise tend to stray.

The conveyor operating chart is one convenient means for indicating to the foreman at any time exactly how men are needed to turn out a given production. A sample chart is shown in the accompanying drawing. It is based on predetermined standards and is merely a conversion graph for use in translating standard allowances to crew required. Standard hours are plotted along the horizontal axis; the diagonal lines indicate desired production of a given unit per day; and the vertical axis connotes the number of operators needed.

To illustrate the use of such a chart, let us assume that the production for one day calls for 600 units of Model *A* and 450 units of Model *B*. We are interested in knowing how many men are need-

ed to handle that quantity at the filler operation. Our predetermined standard for filling Model *A* is 4 hours per 100 units, and for filling Model *B*, 7½ hours per 100 units. By referring to the chart, we find that 3.0 men are necessary to fill Model *A*, and 4.2 men are required to fill Model *B*, or a total of 7.2 men. This means that if 7.2 men were used for filling the 1050 units, each would earn base rate. In order to permit these men to earn a bonus of 20%, we would divide 7.2 by 1.20 and use the resultant figure of six men.

With the aid of this and similar data a foreman need not only rely solely upon judgment as to the size of crew needed daily. He can determine, with a minimum of effort, what his correct operating force should be.

Organization of Services

The importance of well organized services must not be overlooked in any discussion of conveyor operation. Servicing would include duties like mixing filler and having it ready when needed, keeping all spray tanks filled, providing supplies of rags, brushes, containers, masking tape and the myriad of other essential items needed to keep a finishing line functioning; maintaining the conveyor mechanism; repairing breakdowns in emergencies, etc. Servicing is necessary in any finishing system. However, it takes on new significance under conveyorized operation. Formerly, if a man ran out of material, he stopped only himself. The next work station operated from a bank and was not bothered by the temporary lull in production at the one point. In conveyorized finishing, however, rarely is it possible to have a bank at each work station. Whenever the conveyor stops, every operator on the line becomes idle. If a spray-man runs out of lacquer, he ties up the whole conveyor for the duration of the delay. Whereas formerly, a 10-minute delay at any one work station was negligible, a 10-minute tie-up on the conveyor may mean a 10-hour delay if 60 men are employed on the line. The same holds true for tie-ups caused by conveyor breakdowns. An efficient conveyor setup, therefore, calls for an organization of service activities so that seldom will the line cease moving.

The servicing of finishing materials can be handled effectively by detailing a worker whose duties it is to keep everyone in supplies. A setup of this nature permits a centralized control of material disbursements, a practice recommended for all finishing departments.

If individual material tanks are used at each booth, requiring refilling during the day, auxiliary tanks can be tied into the spraying system until the service man can refill the main unit.

On large conveyor installations, it may pay to have a maintenance man on hand, who is completely familiar with the conveyor and drying system, to cope with emergency breakdowns. A few cents expended in protection will save dollars not only in repair costs, but in idle direct-labor costs when breakdowns do occur.

Incentive Problems; What Pay Plan to Use

The problem of wage payment on a finishing conveyor is one worthy of serious thought. The easiest thing to do is to pay day work. However, unless superior control is maintained and the day work is measured, costs tend to become excessive.

The most common form of incentive used on conveyor installations is an overall group bonus. For each model being finished, a standard allowance is set by the time-study department to cover all the operations performed, and this is usually a summation of standard allowances for each individual operation. Each day the operating group is credited with the total number of units completed. The total actual man-hours or dollars expended, when compared to the allowed standard hours or dollars, then gives the percentage proficiency.

Although this is regular piecework applied to a group, its effectiveness depends largely on the method of application. Experience would indicate that as the size of a group increases the incentive power of a group bonus plan goes down. The underlying cause for this relationship can be attributed to the number of variables which enter into the earnings picture over which the individual operator has no control. To name two, the conveyor can be overmanned at any one work station, thereby unduly increasing the man-hours of work expended; or local difficulties near the end of the line may reduce the final finished count for which the whole group is credited on any given day. Under both circumstances an individual operator may work hard and yet fail to make a bonus. Frequent recurrence of such conditions will, in the end, demoralize the whole group and bring about a general state of apathy.

Group Bonus System

On the other hand, when the groups are small, there is a greater tendency to work together, to cooperate. Each member is able to see whether his fellow worker is carrying his share of the load. Why a bonus was or was not earned is easier to understand. In the end, greater proficiency can be attained and a much healthier employe attitude will be evident.

Of course, small groups complicate the time keeping problem and increase clerical costs. Instead of computing one bonus, several must be calculated; in place of one count, a number of counting points must be maintained. Instead of having to sell one rate, several rates have to be sold, and allowances have to be more accurate.

The plan to use, therefore, depends to a large extent on the individual company, the complexity of its finishing schedule, the number of conveyor employes, the efficiency of its directing staff, the amount of time that can be devoted to setting standards, and the general attitude of its labor force.

The Capable Foreman

It is almost axiomatic that efficient conveyor operation calls for a high degree of supervisory control. Responsibility for such control generally rests squarely on the shoulders of the finishing foreman.

Industrial literature is replete with articles treating on what constitutes a good foreman. Suffice it to say now that in addition to a thorough knowledge of finishing, here more than in any other department, he must possess those qualities that manifest themselves in clear thinking, quick acting, and cost consciousness.

A foreman must be capable not only to anticipate difficulties but to act on them promptly when they occur. An auxiliary staff department can provide all kinds of planning and production operating information, yet only someone in au-

thority and on the job, such as the foreman, can effectively make the most of this data, for things happen rapidly on a conveyor. Errors that formerly could be passed off as trifles create a minor crisis on the line. Expenses, if not guarded closely, pyramid by leaps and bounds. A minor grievance can suddenly flare up into an acute labor problem.

The foreman is undoubtedly the biggest factor governing the continued success or failure of the conveyor system. If he is capable, he will make the conveyor work for him in harmony with its original purpose. If he is not capable, he and the company may end up working for the conveyor.

Frolics in The Finish Room—3

IT IS a known fact that most finishers use tobacco, in some form or other, while in the finishing department at work. Of course, there are exceptions but nevertheless my experience has been that the majority of finishers chew their favorite brand of tobacco.

Well it happened this way: One operator I have in mind, kept his supply of tobacco for the week stored in a cabinet on the wall near where he worked. Several others in the department knew this and one day when this operator was off duty, some of the men took this opportunity to get a chew of tobacco free of charge. When the operator returned to work he found that his weekly supply was nearly exhausted.

Some time later the same operator again took off for a few days. While he was off duty, the same thing happened—but to the surprise of his fellow workers, those who took liberties with his tobacco suffered sore mouths. Before leaving he had added red pepper to each package—and the biggest joke of all was that one of the foremen on his floor got a mouth full of the red pepper tobacco.—F. W. WORTH.

Editor's Note: Stories of other funny happenings in the finishing room will be welcome.

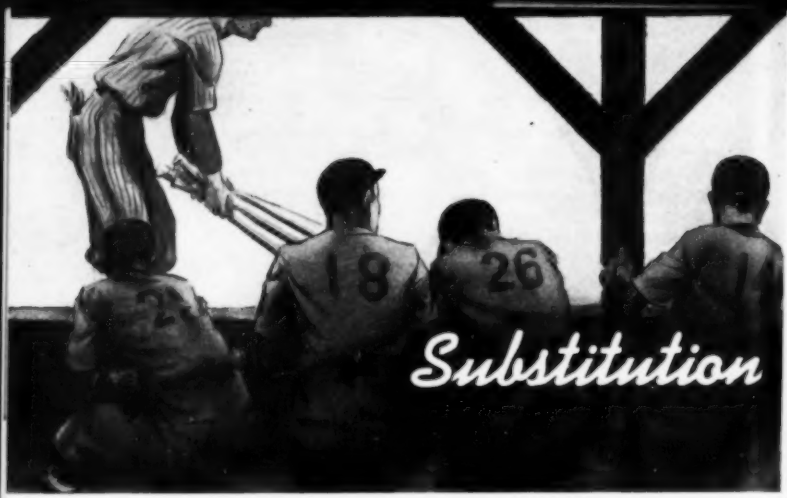
Bulletin on Custom Finishes

Two bulletins about custom bleaches and wood finishing materials have been prepared and published by Kenwood Brands Laboratory, Asheville, N. C. The company now offers "a new finishing service using plant proven materials applicable to both large scale operations and the most exacting custom finishing."

E. S. Bissell Promoted to V. P. of Mixing Equipment Co.

E. S. Bissell has been made Vice-President of the Mixing Equipment Co., Inc., of Rochester, N. Y., by action of the Board of Directors of that company in May, 1941. Prior to his promotion, Mr. Bissell was Technical Sales Manager of the Mixing Equipment Co.

Since joining the company in January, 1937, as Sales Manager, Mr. Bissell's rise has been rapid. Within a few months, he was also appointed director of reseach, and assumed the responsibilities of development and market study. With the subsequent substantial increase in Mixing Equipment sales and a greatly expanded engineering program, Mr. Bissell has assumed the larger responsibilities of Vice-President.



WITH the exception of transparent colored lacquers and varnishes, all of the types of finishes mentioned in Part I of this article (June issue) depend largely upon the use of metallic pigments and powders. "How then", the question arises, "can these pigments and powders be supplied if metals are getting scarce?" This question is best answered by first dividing all metallic pigments into two groups—those that contain copper and brass, and those that are pure aluminum.

Those of the copper and brass type are, at the present time, freely obtainable in any quantity or grade. Supplies of copper are relatively large and crude deposits are plentiful. While it is not the purpose of this article to predict future availability of any material, it is quite likely that copper-type pigments will continue to be procurable, particularly since their increased use will free for more urgent requirements a large proportion of the solid metal now widely used in decorative applications. Aluminum powders and pastes, however, will not do this as readily because they have never competed very seriously with the solid metal. At the present time (May, 1941), aluminum powders and pastes are obtainable in limited quantities. Under the Priorities Division, Office of Production Management, paint manufacturers have been allocated a percentage of their requirements, as based on their consumption throughout the year 1940. How long this limited availability will remain cannot be foretold.

Wrinkle and Texture

In the same manner that solid metals can, in many instances, be replaced by other materials such as wood, leather, fabric and glass, they can also be replaced by using cheaper metals such as iron which can be coated with texture finishes. These texture finishes are paint materials which, upon drying, produce uniform surface irregularities of a pleasing and attractive nature. One of the most widely used texture finishes today is the popular durable wrinkle enamel.

Wrinkle finishes can be obtained

Final section of a 2-part article in which the author reveals timely information about various types of organic coatings which are rapidly becoming of increasing importance in assuming the place of strategic metals for new decorative effects.

BY PAUL WALLACE

Finishes We May Turn To

AS A RESULT OF OUR DEFENSE PROGRAM

in either synthetic or oleoresinous qualities, in patterns ranging from that of a finely crinkled surface to a coarse leathery looking ripple. They can be glossy or dull, and may be had in any desired color. They may be colored with ordinary pigments or with metallic pigments or both. Most wrinkle finishes, after they are applied, must be cured by baking in an oven for a specified period of time at a specified temperature, although a few types will form at room temperatures and will eventually dry hard if placed in a moderately warm location.

Wrinkle finishes are hard and tough, and are extremely resistant to water, oil and grease, alcohol and abrasion. They are quite durable, as is attested to by the present widespread use on typewriting machines and vacuum cleaners. They will maintain their protective and decorative qualities over long periods of service. In appearance they may be classified by an interior decorator as a "warm" finish since they do not suggest a cold hard and reflective surface. Finally, they have the advantage over most organic finishes in that they are truly a one-coat finish, because one coat, even over rough surfaced materials, will cover perfectly and will hide surface imperfections.

Crystallizing Varnishes

While wrinkle finishes are probably the most widely used textured finishes at the present time, it would be hardly fair to ignore a type of finish which was widely used before wrinkles came into the prominence they enjoy today. I refer to the crystallizing varnishes. In properties, use and durability, they are perhaps the equal of wrinkle finishes. The major difference is that crystallizing varnishes produce a flaky crystalline effect. This effect is obtained by baking in what is commonly known as a "foul oven." The oven is heated by gas or some other fuel, the combustion gases of which are allowed to concentrate within the baking chamber itself by the simple expedient of closing, insofar as is possible, all exhaust vents and all fresh-air intake dampers.

Crackle Lacquer; 2-color Effect

For maximum speed in production output, lacquers have held indisputable prominence over all other types of organic coatings. They are able to compete with varnishes and synthetics, not only in the field of metallic coatings but also, to a lesser extent, in the field of textured finishes. Of this latter classification, there are three types of lacquers which can be obtained.

First of these is the crackle lacquer. For a complete finishing system either two or three different applications are generally used. The first coat usually consists of a specially prepared clear or enameled-base material, the purpose of which is to provide not only a bond to the surface being coated, but also to contribute one of the colors to be present in the completed decorative scheme. When clear base coats are used, the secondary color will be that of the material to which the system is applied.

The second coat, this time of the crackle lacquer itself, may be applied as soon as the base coat has become tack free. The success and appearance of the completed job depends greatly on the uniformity with which the extremely fast-drying and highly pigmented crackle lacquer is applied, for it is only a second or two after it strikes the surface, that the crackle lacquer begins to crack and separate.

Through these cracks then becomes visible either the color of the base enamel or the color of the metal under the base coating of clear lacquer. This coating of crackle lacquer is invariably flat in sheen, and if such an effect is desirable, the finish may be termed complete at this point. If, however, a glossy surface is required, it is necessary to apply a third and final coat of suitable clear gloss lacquer.

Such finishes are ideal for many interior uses since, 1) they are obtainable in practically any color scheme, and 2) the pattern can be varied to either a small or a large design, depending on whether a light or a heavy coat of the crackling lacquer is applied. Display racks, hardware, lunch boxes, furnace equipment and enclosures, carrying cases and tool boxes are but a few of the many possible adaptations for this versatile finish.

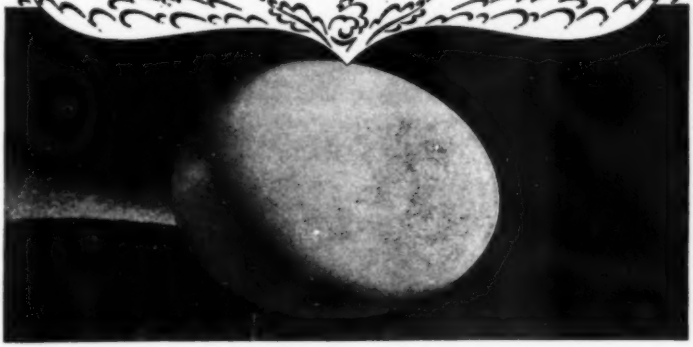
Crystallizing Lacquer

A second type of textured lacquer is the crystallizing lacquer. This is not to be confused with crystallizing varnish since it does not have the wide range of adaptability of the latter. It is limited in that it is best suited as a clear or transparent color coating over materials that are already transparent or translucent, and to which a delicate tracery is to be applied.

A single application of this air-drying lacquer is all that is required to produce the desired effect. It sprays like the conventional clear lacquer but dries a little more slowly. Whereas the ordinary clear metal lacquer will dry in from five to ten minutes time, the crystallizing lacquer may take as long as one hour. This increased length of time is essential for the most beautiful effects, because the delicate fern-like designs are formed in the film by actual growth of crystalline materials, which, after the film is formed and thoroughly dry, evaporate slowly into the air. Crystal lacquers can be used as decorative glass and mirror frostings, coatings for showcase partitions and ends, clock and dial faces, transom windows, and store front window sections.

The third type of lacquer coating is probably the most realistic tex-

There is no such thing as a pretty good egg!



No siree! You don't have to be an ornithologist to know that an egg is either *good* or *bad!* And, as a man with a product to sell, you also know that there's no such thing as a *pretty good* finish! The finish on your product either gives it sales appeal . . . gives your salesmen an added talking point...delivers satisfactory field behavior —or it does not! If you have reason to question the appeal or performance of your present finish, turn to VEDOC! VEDOC is designed to be used in the average production setup provided for the use of synthetic enamels. It is available in either white or black. Application is by spraying or dipping. Write for information today about this newest FERRO Finish and about our complete line of baking and finishing equipment. Ferro's trained engineers will tailor *your* job to meet *your* requirements!

LIQUID PLASTIC DIVISION

FERRO ENAMEL CORPORATION

CLEVELAND, OHIO

Vedoc!

THE LIQUID PLASTIC FINISH!

ture imitation that it is possible to obtain by spraying. This is the flock lacquer. Actually such a coating is not a pure lacquer finish, but one that combines a lacquer with a textile fiber called "flock". This fiber may be cotton, wool, silk, acetate rayon or some similar material which is cut to small and uniform length and can be obtained already dyed in any fabric color. An interesting possibility for future development may be the use of colored glass fiber for use as "flock".

In applying a flock finish, the article is first covered completely with a heavy coating of a slow-drying lacquer cement especially formulated for spray application. When this is completed, the entire piece is then sprayed with a coat of the flock using a special flock gun. This gun, operated by compressed air, separates the fibers from each other, fluffs them by air agitation, and then ejects them toward the work in a soft steady stream. The ends of the fibers stick into the still wet lacquer surface, and when the entire piece is covered, any excess flock is blown off by compressed air. This excess flock is automatically collected and used again. When the lacquer bond is completely dry, the fibers that cover the piece adhere firmly and tightly and, depending upon the length of fiber used, produce surfaces that closely resemble suede, fine felt or velvet.

Such surfaces are soft to the touch and will not scratch any highly polished surface with which they are in contact. For this reason flock coatings are being used extensively to line jewelry cases, silverware boxes, spectacle cases, instrument cases and such. One very large use to which flock lacquers are put, at present, is in lining the interiors of glove compartments of modern automobiles.

One of the most unique uses for flock lacquers takes advantage of its soft and resilient surface. Some industries manufacturing large and expensive glass castings often make plaster molds of the finished casts, line the plaster molds with flock and use them as packing cases for shipping the fragile articles. Needless to say, the packing cases fit perfectly.

Throughout this article I have gradually gotten away from the subject of metal-like finishes in much the same manner that we, in actual production, may have to curtail our use of solid metals and metal platings in favor of metallic finishes or even texture finishes—if the metal supply market is further restricted during ensuing months. The paint industry has recognized these possibilities, and through its offerings of the types of finishes which have been discussed above, is ready to assist the manufacturing and finishing industries in maintaining a normal output of attractively finished, decorative goods.

Spray Painting School Open This Fall

The DeVilbiss Co., Toledo, Ohio, has announced the schedule of its Training School for users of spray-painting equipment for the last six months of 1941.

The school is open to industrial finishers, painters, automobile refinishers, and other users of DeVilbiss equipment interested in learning the technique of spray painting and the use and care of spray painting equipment. It will be held at the company's Toledo, O., plant.

Dates for the start of each training period are: Sept. 22, Oct. 20, Nov. 10, and Dec. 15.

Because of the limited size of classes, earliest possible enrollment is advised. DeVilbiss has already made special arrangements in Toledo hotels and boarding houses for the men attending the school.

Complete information regarding the Training School may be obtained by writing to the DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio.

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to Enhance the Appearance

OF EVERY SURFACE

Specially Made for All Processes

Including **ROLLER COAT • GASKET DIP**
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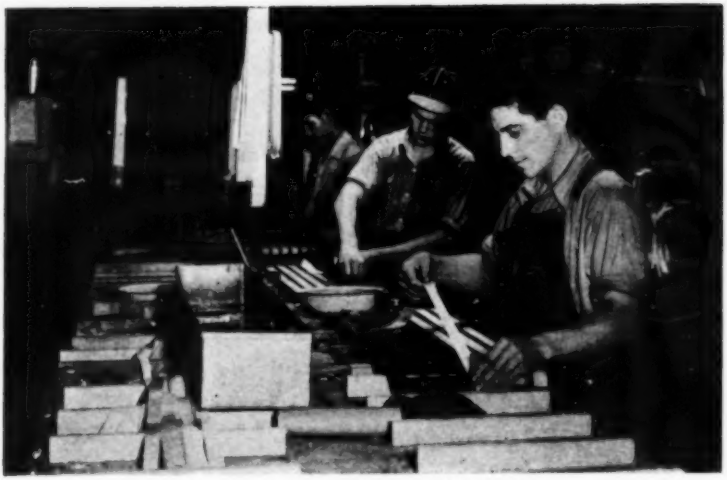


Using Decals to Grain

THE USE OF lacquer decalcomanias for making natural reproductions of figured wood has become more popular and more extensive in furniture factories during the last few years. Once considered a cheap gaudy decoration, decals have been vastly improved and have, in many instances, taken the place of real veneers. This is because they show richly-grained effects so realistically and so economically when they are used properly.

When the furniture designer gives due consideration to the use of decals from a production standpoint, as well as to getting excellent decorative effects (without going to extremes), some remarkable results can be secured. These graining decals are being used on all grades of furniture—from the cheapest to the most expensive. Of course, they are particularly adapted to use on Borax and Modern furniture, but they are being used on many of the more conservative suites for trim, etc.

We are using this decalcomania graining in five of our six furniture plants at the present time—and with excellent success. In the plant where I am foreman, decals are being used mostly as trim and banding, and in places where it would be too slow and costly to use real wood veneer. Places that were formerly inaccessible for veneers—and which consequently created both a production and a finishing problem—are now veneered in the finishing rooms rapidly and easily with graining decals.

The illustration on opposite page shows workmen applying decals to furniture parts before assembly.

At left: A workman applying decal ornamentation to the sanded sealer coat of furniture traveling along conveyor line in finishing room.

BY H. W. CHESTER
Finishing Foreman

Furniture

We get reproductions of rare crotches and burls which, if we had to depend upon getting the real veneers, we could not afford to use because of their scarcity and their almost prohibitive prices. We are also using a considerable quantity of reproductions of high-grade marquetry borders and spot marquetry designs which we could not use so freely if we had to buy the real inlays. Due to the reasonable cost of these decals, and the low cost of their application as compared with real inlays and veneers, they are finding their way on more and more furniture today.

Applying Decals Before Furniture Is Assembled

In places where it is convenient, we apply the decals to the various surfaces before the pieces are assembled, as we find this to be more economical from a labor standpoint. The workman lays several un-assembled parts, at a time, on a table; then he applies the transfers. In this way it is more convenient and he can apply the transfers much faster than he could after the furniture is assembled.

When we apply decals before assembly, we spray the bare wood surface (to which the decal is to be applied) with a coat of clear lacquer or a good grade of lacquer sealer—one that does not contain too much stearate. On certain soft woods and end grain, where the sprayed material would soak into the wood quickly, it is sometimes necessary to apply two coats in order to get a satisfactory founda-

tion. A good smooth foundation of lacquer is essential before the decal is applied. This helps to make possible a smooth job and it allows perfect adhesion for the transfer. The decal transfer, being a film of high-grade lacquer, becomes a permanent part of the finish when it is applied to a lacquer base.

Putting on Decals; Stripping Off Backing Paper

These decals are applied with a welding solution which, I understand, consists of a patented formula of lacquer solvents. We buy this in concentrated form. Before using it, we mix it half and half with water. The transfer is dipped into this solution and wiped off partially so as not to waste the cement or allow it to drip on the working surface. Turning the lacquered side next to the surface to be grained, we affix one end by pressing it down with a rubber squeegee. At the same time we hold the free end slightly away from the surface. We press it down into position firmly and quickly with the squeegee, using short strokes and continuing the work until it is completely squeegeed down.

These transfers come attached to double paper. The top paper or outside covering is heavy to protect the lacquer film from friction when applying firm squeegee pressure. As soon as the grained transfer has been squeegeed into position we separate the heavy backing paper at one corner and strip it off. The remaining tissue paper is carefully rubbed with a water-moistened sponge and also removed. The lacquer film is then wiped with a wet sponge and finally with dry chamois skin to clean off the dextrine. Special care should be taken to clean the film thoroughly, especially if the finishing coat is lacquer, because any dextrine left on the film will cause the finish to check afterward.

We allow the transfer to dry for half an hour before applying the finishing coat. The heavy backing paper may be left on if your operation calls for a temporary mask over the transfer for shading purposes.

Lacquer-film decals are also made with single-paper backing, in which case the transfers are first soaked in water to remove the backing paper. The welding solution is then applied, with a brush or a sponge, to the surface to be transferred. The lacquer film from which the backing paper has been removed is then applied to the surface, affixing one end by pressing it down with a rubber squeegee, and continuing the squeegee strokes until the entire piece has been pressed on. It is wiped with a wet sponge and then with dry chamois skin to remove the dextrine.

It has been my experience that the single-paper-back transfers are more difficult to handle and apply, and are more likely to tear and wrinkle. This is especially true when we are graining the fronts of drawers, etc. After the paper backing has been removed you have only a thin lacquer film to handle.

Also on Sanded Sealer Coat, Applied at Conveyor

In places where it is impractical, inconvenient or impossible to apply decal graining to the unassembled pieces, we apply it after the sealer coat has been sanded. We use the same technique in applying decals to assembled furniture as we do when working the unfinished pieces

ON THE ALERT!

• Bombers approaching! At the watchful ground station delicate detectors locate them afar—direct the stabbing searchlights that probe them out—turn them into clear targets that can be seen and hit.

That's how Glidden helps manufacturers who are bombarded by strange new finishing problems today. Its specialized sales force detects these problems even before the crucial need appears—reports them to Glidden engineers who turn the searching light of research upon them to find a solution.

Glidden has developed replacement finishes for zinc plating, galvanizing, aluminum coating and others now barred by metal shortages. It is enabling many industries to maintain peak production that otherwise would have been curtailed by defense restrictions.

Whatever your product, if new finishing difficulties threaten your operations—sound the *Alert* for Glidden.

THE GLIDDEN COMPANY • National Headquarters, Cleveland, Ohio

Branches or Factories in Principal Cities

on the bench. This work is done on the moving conveyor without removing the various pieces from the trays. In applying it this way, we take special care in checking our sealer to make sure that it doesn't contain too much stearate, as this would reduce effective adhesion. Of course, most lacquer sealers now on the market do not contain enough stearate to hinder adhesion of the decalcomania to a lacquer-sealed surface.

Purchasing and Cutting Decals

We buy most of this material cut to our specifications. However, in places where we have occasion to use odd-shaped pieces, such as round or shield-shaped overlays, etc., that cannot be cut on power clippers, we buy the full sheets, 34x50-in. By placing from 25 to 50 sheets on a thin plywood panel, we can bandsaw them as easily as we can saw wood.

By this decalcomania process we get perfect reproductions of various beautiful woods and marquetries, as well as marble grain. The rapid and easy application of decals to wood surfaces makes them especially adaptable for use as banding and for graining concave and convex surfaces, overlays, etc. The decal practically molds itself to any curved surface, if handled properly. The flexibility of this process puts it in a place where its uses and possibilities are almost unlimited. It is in line with many other new developments coming along in the field of decorative finishing.

We feel that by having used it intelligently in our designing department and having made sure of getting a first class job of application in our several finishing rooms, we have helped a great deal to promote and encourage the use of decalcomania graining on furniture. I am sure that its popularity is increasing and that we will see more and more of it used in the future.

Your Back Order

Keep your temper, Gentle Sir,
Writes the manufacturer,
Though your goods are overdue,
For a month or maybe two,
We can't help it. Please don't swear.
Labor's scarce and resins rare.
Can't get dyes; costs all rise.
These are facts. We tell no lies.

Harry's drafted; so is Bill.
All our work is now uphill
So your order, we're afraid,
May be still a bit delayed.
Still you'll get it. Don't be vexed;
Maybe this month, maybe next.
Keep on hoping. Don't say die.
We'll fill your order bye and bye.

—S. W.

Shellac Finishing Booklet Free

A new booklet entitled, "How to Use Shellac for Best Results" has just been issued by the Shellac Information Bureau. Here, assembled under one cover, is useful information on shellac as a finish for fine furniture and as the economical finish for floors and general interior woodwork.

The illustrated brochure shows in color the results of a series of scientific tests recently conducted at the Brooklyn Polytechnic Institute, to determine the comparative wearing qualities of various floor finishes in popular use today. For a free copy, write Shellac Information Bureau, 70 Pine St., New York, N. Y.

Sans-Arb

PHOTO LACQUER FILMS

by Meyercord

Fast-Applying Lacquer Decalcomania

Many a modern product was once "merely a substitute", but modern developments have given it scope and usefulness far beyond that of the product which it has replaced.

Meyercord Wood Grain Re-Creations and decorations are universally accepted not as substitutes for wood grains, but as a rapid economical decorating method for production.

In the furniture field, for instance, these photo lacquer films have become an indispensible medium not only for conventional decoration, but for unusual effects—banding, striping, and the decoration of curves, convex, and concave surfaces.

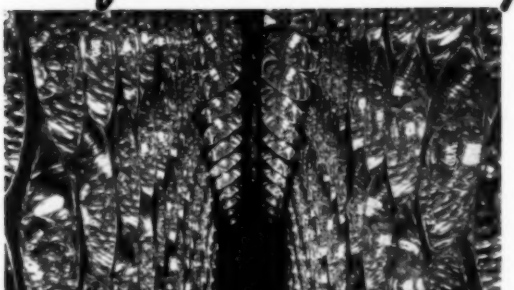
For salable beauty at a saving, use SANS-ARB.

THE MEYERCORD CO.

GRAINING DIVISION

5323 West Lake Street Chicago, Illinois

Infra-red Baking



Interior view of infra-red tunnel through which spray-painted light reflectors are carried by a chain conveyor

CONTRARY to some reports, there is no mystery involved in the infra-red process, as used for curing or baking paint and enamel coatings. Perhaps the simplest example is our use of a mirror in combination with a small magnifying glass when, as boys, we used to burn holes in paper, felt hats, etc., using the sun as the heat source. It is a simple step from this to a combination of manufactured heat source (such as the filament of an incandescent lamp) and a gold-plated parabolic-style reflector. Thus, the special drying lamp is substituted for the sun, and the gold-plated reflector for the mirror. Then, by organizing these units into strips, flat banks and flexible tunnels, many special configurations are secured—resulting in even distribution of the heat rays.

Now, let us return for a moment to the magnifying glass. To further simplify our illustration, suppose we omit the mirror. You may actually feel the rays by directing them into the palm of your hand. Properly focused (concentrated on a small area), these rays will burn your hand. But properly distributed, they will heat a surface uniformly. Indeed, one may hold a lighted cigarette in front of a gold-plated reflector, at a point about where the carbon filament of the lamp might be, and feel the reflected heat quite noticeably. Try it some time.

Now comes another important

g of Fluorescent Reflectors

BY WILLIAM J. MISKELLA
Fostoria Engineering Service of Cleveland

cog in the wheel. Add a highly specialized engineering service to co-ordinate all the factors involved; for example, type of paint, drying cycle, distance from the work, proper heat distribution, lowest possible cost of electrical energy, most efficient means of handling products through the tunnel, floor arrangement to provide for a "stand-out" period before, and a "cool-down" period after, passing through the tunnel.

Then too, one must look ahead and consider future growth of the equipment so that when or if the time comes additions can be made economically. Also, the speed of the conveyor must be easily varied to correspond to any desired increase in production.

It is easy to see that when one has infra-red bulbs and reflectors available he can make a modest start. However, he may do the job so inefficiently — unknowingly,

The assembly benches are served by overhead conveyor lines. What appears to be 12 large white panels hanging from the ceiling — this is the outside shell of the streamlined infra-red conveyor oven which is four 6-ft. sections in length. The outside shell is painted light gray, with black bands extending vertically, see interior on opposite page.

of course—that the attempted infra-red experiment will be a failure. Many such tests have been made, resulting in a negative decision, whereas properly approached, the opposite would have been the result. Probably more snap decisions have been made about infra-red in the past two years than in any major scientific development.

One of the most difficult facts for old-line finishers (and some of their bosses) to realize is a 6-minute baking period in lieu of a period of from one to two hours in a convection oven. To make it more spectacular, all of the infra-red operations are right out in the open where one can actually see what is happening to the finish. What a change from the old methods . . . .

The infra-red process directs the heat rays, which are so penetrating that they pass through the wet paint coating, to the metal where the heat is stored. This is accomplished quickly, before a thin skin can form on the paint coat to imprison the volatile solvents. In this way the paint solvents are driven out by heat from below. They pass off freely without friction and, in most cases, without the need of a fume exhaust.

Fluorescent Lights Popular; Enameled Reflectors Required

One hears at all stops today the question: "Is this fluorescent boom just a flash in the pan?" One large electric manufacturer has built a branch plant near Cleveland to produce 15,000,000-lbs. of glass tubing to go into the making of 5,000,000 fluorescent tubes per year.

Another large electric manufacturer has started a new plant in West Virginia—said to be the largest of its kind in the world—with a production of 50,000 tubes per day and a capacity to handle 200,000 tubes per day.

Is it any surprise then, that John C. Virden Co., Cleveland, Ohio, a large electric-fixture manufacturer, should tune in with this glass-tube development and establish an entirely new and independent department for making various sizes of fluorescent fixtures? To be sure, wherever a fluorescent tube is used, there must be some kind of a fixture (usually a sheet-metal trough) to hold one or several tubes in position—and to serve as a reflector.

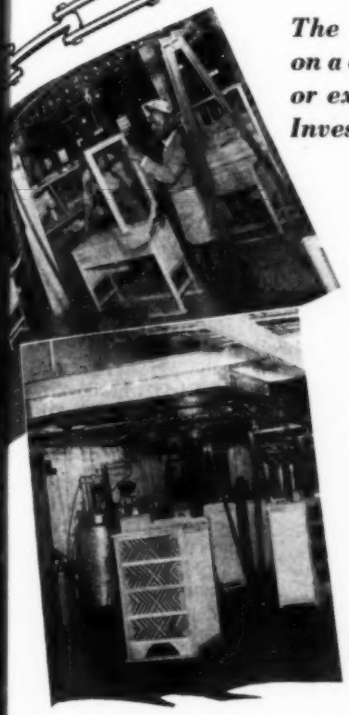
Since fluorescent tubes are "cold" when lighted, it may be surprising news to readers of this magazine to learn that porcelain enamel, which has had a seat in the front line for a long time on reflectors for lighting units, is about to take a back seat. Synthetic baking enamel is to be the new occupant of that front seat; it furnishes a perfect reflecting surface at a much lower cost.

Working Out Present and Future Production Needs

Paul J. Pfeifer, the Virden Company's plant superintendent, has an enviable record for working out unusual production methods in finishing quality electric-fixture parts. He quickly jumped into the task of creating a completely conveyorized department which included all of the latest equipment, methods and materials.

The present Virden fluorescent fixtures consist of metal troughs 4x4-in., in lengths of 24, 48 and 60-in. After these sheet-metal troughs have been formed and welded they are hung on a continuous conveyor line which carries them to and through a vapor degreaser to clean the metal surfaces

Conveyor-ized FURNITURE FINISHING

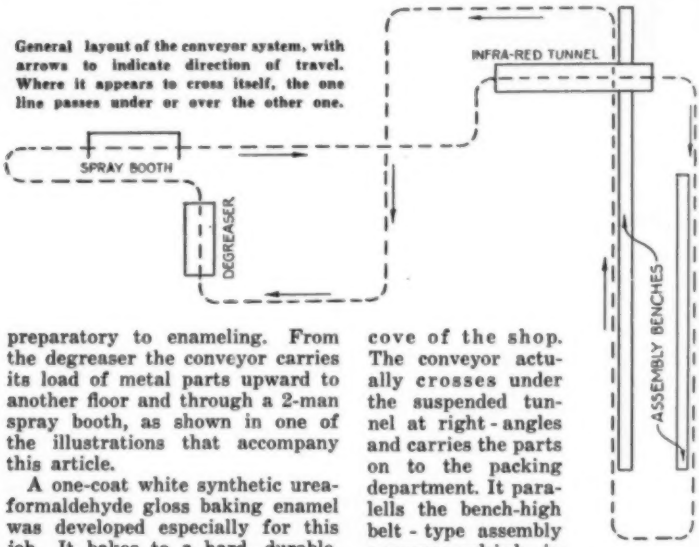


The complete finishing of furniture on a conveyor line is no longer a dream or experiment. It is an accepted fact. Investigate!

The trend is toward conveyorized finishing of furniture without question, marking one of the latest improvements and developments in finishing equipment. Palmer-Bee has planned, engineered, and conveyorized a number of furniture finishing departments in recent months, and will be pleased to arrange for your inspection of these conveyor lines in operation at any time. Also, at no cost to you, one of our skilled engineers will analyze your plant and production, and submit a plan and program through your finishing room — warehouse — cabinet room — machine room. Ask for the details!

PALMER-BEE CO., DETROIT, MICH.

Specialists in conveyorization of all production operations



General layout of the conveyor system, with arrows to indicate direction of travel. Where it appears to cross itself, the one line passes under or over the other one.

preparatory to enameling. From the degreaser the conveyor carries its load of metal parts upward to another floor and through a 2-man spray booth, as shown in one of the illustrations that accompany this article.

A one-coat white synthetic urea-formaldehyde gloss baking enamel was developed especially for this job. It bakes to a hard, durable, flexible coating that has remarkable reflective properties. This enamel cures perfectly within six minutes, in an infra-red tunnel that does not exceed 25-ft. in length.

The firm that supplied and installed the infra-red equipment worked in close cooperation with the Virden Co. and with the paint manufacturer As a result this infra-red equipment is representative of the last word in infra-red engineering, flexibility and low maintenance cost—and in the use of "zero floor space."

Oven Occupies No Floor Space

The term "zero floor space" demands an explanation, I know. However, the term is justified because the production line actually loops around after coming out of the infra-red tunnel, which is suspended from the ceiling in an alcove of the shop. The conveyor actually crosses under the suspended tunnel at right-angles and carries the parts on to the packing department. It parallells the bench-high belt-type assembly conveyor which, in turn, parallels the overhead conveyor carrying the parts from the infra-red tunnel. Girls who do the assembly work stand between these two conveyor lines, as shown in the illustration at the beginning of this article.

As a further surprise, there is a space of only 7-in. between the wooden building rafters and the top of the infra-red tunnel. In this tunnel, the hexagon-faced gold-plated reflectors and filler units (half hexagons which fill in along outside edges) combine to produce a solid wall of gold within the tunnel.

The amount of synthetic baking enamel used approximates one gallon every six minutes. Insurance regulations require a movement of air of 9200-cu.ft. per minute for each gallon of solvent evaporated in a convection-type oven. Since

Add up these

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then specify

Yarnall Wrinkle Finish

Always uniform in texture, of wrinkle, color and viscosity. It is a one coat enamel.

Ease and economy of application in production.

Its pleasing and acceptable appearance adds to greater eye and sales appeal.

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Here the conveyor is bringing up parts from a lower floor where they have gone through a degreaser to clean them preparatory to enameling. After making a hairpin turn, the parts travel through a 2-man spray booth where they are sprayed with white synthetic enamel; then to and through the infra-red oven shown at the beginning of this article.

there are no regulations on infra-red tunnels to correspond, we are forced to use the extreme requirements at present, as laid down for convection-type installations. To accomplish this a fan was installed on the roof where the two stacks rise. Normally, gravity air flow would be sufficient, but not positive for all atmospheric conditions during the different seasons of the year.

Infra-Red Tunnel Is in Adjustable Sections

The tunnel proper contains 564 para-sphere gold-plated hexagon-face reflectors, each with an adjustable focus. There is a basic electrical load of 116-kw. The oven is 7½-ft. high, 25-ft. long and 42-in. wide when in use. The conveyor speed may be varied from a production of 100 fixtures per hour to a production of 260 fixtures per hour. So efficient is this equipment that you can hold your hand against the non-insulated back of the tunnel at any time. It is warm but not hot. The real heat is all directed toward the freshly painted products.

The tunnel is composed of eight duplicate 6-ft. sections, for ease of installation and simplicity of manufacture. Each section forms half of a 6-ft. length of tunnel enclosure. Two halves (a right and left, but they are identical and each extends from top to bottom) form a section of complete tunnel; in other words, the eight 6-ft. sections really make a tunnel that is four sections in length. After

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Synthetic enamel dries in 12 minutes under these drying lamps mounted on two portable racks.

Portable radiant heat drying rack used in shop where a body repair gets 3 prime coats and 3 finish coats of paint. Former drying time per coat: about 1½ hours. Radiant heat time: 20 min.

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Westinghouse

RADIANT HEAT DRYING LAMPS

He rolled up his sleeves...AND

E. I. DU PONT DE NEMOURS & COMPANY (INC.), FI SHES

. AND STOPPED "BLUSHING"!

IT WAS just a routine call on a maker of metal soap dishes. But this Du Pont man found the plant had been shut down for a week because of trouble in the finishing department. The clear dipping lacquer on their cadmium-plated pieces was "blushing"—and they hadn't been able to discover why.

Then the Du Pont man rolled up his sleeves and went to work. First, he suggested a "retarder" thinner to slow up the lacquer drying. But still each piece had a dull whitish haze instead of the brightness of cadmium plate. Next, as a test, he dipped one of the bright plated pieces in glycerin. The haze still appeared . . . even in this transparent fluid! Perhaps the trouble was in the plating bath . . . not the lacquer.

The cadmium plate was grainy, he found. And the haze was caused by light reflecting from this bright grainy surface through the lacquer. So he recommended filtering the plating solution. This did the trick! The plating came smooth. The "blushing" was stopped and the pieces no longer took on a whitish haze. So the plant went back into production—the Du Pont man went on his way.

This story shows you why so many manufacturers—because of such service as this—consider Du Pont as part of their own Finishing Department. They know the Du Pont man—be he research chemist, laboratory technician, production man, service engineer or field representative—has behind him Du Pont's wide experience in the development, manufacture and application of better finishes.

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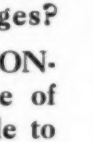
HILO

Write TODAY for Hilo Bulletin No. 1, the catalogue which describes these Blacks and lists their uses and applications.



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erection, the tunnel sections are suspended from the building joists by grooved pulleys. The arrangement is such that these halves may be spread apart for inspection, maintenance, cleaning, changing lamps, etc.

The entire tunnel is wired for balance on a 3-phase, 220-volt circuit, with pairs of 110-volt 250-watt drying lamps in series. A central switchboard panel on the wall below controls all sections and sub-sections so that any desired combination of lamps may be obtained. When or if production is low, only the first section of the tunnel need be used—provided the conveyor speed is reduced to correspond, to keep the parts under the lamps for six minutes.

The top and bottom angular reflectors are switched separately and may be used or not, as demanded. When 24-in. fluorescent fixtures are being run, only the top half of the two sides of the infra-red tunnel operates. When production of the 24-in. model is heavy, one piece may be hung below the other and thus the equal of a 48-in. unit is secured.

In tune with the spirit of the age, it was decided to provide streamlined metal covers over the backs of the tunnel sections and paint them in light gray, further decorating them with black bands which cover the joints of the sheets. You see the attractive effect produced in the upper part of the illustration, which appears on the second page of this article. The paint used for this purpose was a synthetic enamel baked in this same infra-red tunnel.

Papier-Mache Faces Decorated

HAVE you ever wondered about the colorful but grotesque figures seen in parades and carnivals —where they came from, what they are made of and how, etc.? There is a concern in Tampa, Florida that has been making them since 1911.

According to Mr. J. F. Gasthoff, Jr., of Gasthoff's Mfg. Co., Inc., the features in the faces of the heads in the accompanying illustration are painted in water colors. Then the entire head is given several coats of clear finish, either varnish or lacquer. These heads are approximately 3-ft. tall and are made of papier-mache. Molds are used to produce the shapes.

Recently this concern produced a number of papier-mache camels for use at the National Convention of the Shrine, held at Indianapolis, in June. These camels were 5-ft. tall and were finished with a brown enamel that is waterproof and weather-proof.—R. S.

Four typical clown heads of papier-mache

Here's how to reduce the cost of furniture finishing from a fat figure to a really slim item in your expenses. Use *shellac* as an undercoat. Shellac not only cuts down costs; it builds up satisfaction, helps you create smarter, smoother finishes.

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Hundreds of furniture manufacturers have tested shellac as a sealer and undercoat for *varnish,* and found that nothing on the market can match it for speed, economy and satisfaction! Now manufacturers are realizing that shellac is tops as a sealer and undercoat for *lacquer,* too!

A good undercoat for lacquer must resist lacquer solvents; must bond firmly with both the wood and the lacquer top coat; it must have similar coefficients of expansion and contraction; and it must be an effective sealer for all spots and stains in the wood.

On every one of these important points, shellac ranks right at the top!

Shellac Is First Choice For Every Phase of Furniture Finishing

Shellac is easier to work with, gives better results, and costs less on every kind of furniture finishing job you have to do. For staining and bleaching, as a final finish, for the beautiful effects of French polishing, or on dip and rub finishes, shellac gives results that will please your production department, as well as your customers.

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Sanding, Staining, Filling

BY R. N. FILKINS

SANDING in the white, which is often slighted in some furniture factories, is very important. A few extra minutes spent in preparing the wood surface will ultimately save many dollars in the finishing room. "A good finish will be only as smooth as the wood surface under it." All wood surfaces should be sanded smoothly with a belt sander, and then by hand—or by a portable power-driven pad.

All woods with open grain such as walnut, oak, mahogany and ash, require filling. In some cases this will be done first, but usually it is left until after the staining process.

If a water stain is to be used, the wood should first be sponged, then sanded again, thus eliminating unnecessary raising of the grain fibers. Warm water should be used, as it does a better job of raising the wood fibers.

Before staining, the wood should be carefully brushed to remove all sand dust from the pores of the wood. The belt sanding operation tends to force loosened wood dust into the pores and fill them. Then, if it is not brushed and blown out, the stain covers it and prevents the filler from being worked into the wood properly. This also applies to the hand sanding that follows machine sanding. In most cases this dust can be removed by using a strong air duster.

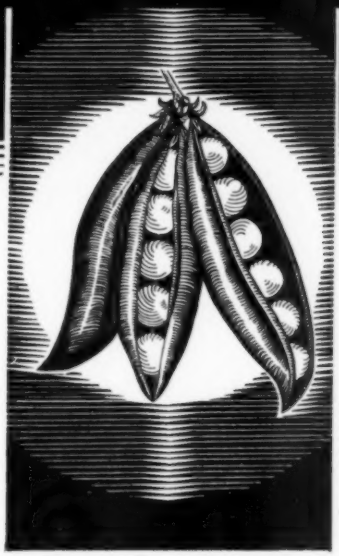
Water stain, which is commonly used, should be brushed on evenly (or applied uniformly if it is put on by spraying or flow-coating). Care should be taken to avoid going over the work more than once. Do not leave any laps, as these will show up later.

End grain is difficult to stain, as the stain penetrates it quickly. This can be avoided by first going over the parts with a damp cloth. Then when you proceed to stain the surface you will get a uniform color. Water stains penetrate into the wood, they are fast to light, and do not fade.* The only disadvantage in their use is their tendency to raise the grain or surface fibers of the wood. This can be controlled to some extent by adding 2-oz. of ethylene glycol to each quart of water stain.

After the stain has air-dried at least 24 hours it should be sized with a wash coat of shellac. This will allow all wood fibers, which have raised, to be sanded down smoothly. The shellac should be sprayed on evenly, using one part of 4-lb.-cut shellac to six parts of alcohol.

The filling operation comes next. This is one of the most important operations in the wood finishing department. You must make a

*Faster-drying non-grain-raising stains are now available and used extensively in production factories.



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good foundation on which to build your finish. The filler should be of good quality. It should be weighed before thinning, using about 12-lbs. of filler to the gallon of solvent. Never thin filler by guess-work. Mix only enough to complete the job. The next batch can be made by using the same amounts as the first. Never allow filler to stand overnight for use the next day, as it may not dry properly after being applied.

The filler may need thinning occasionally due to evaporation of the solvents. If so, thin it and keep it about the consistency of varnish. Filler that is too heavy will not fill your work properly. Never add any oils or japan drier to your filler; you must understand that this has already been done by the manufacturer.

If the remainder of your filler has a tendency to dry out in the shipping container after some has been used, scrape all excess filler from the sides of the can and pat it down level with the remainder to form a level surface. Then cut some wax paper or oil paper that will fit the inside of the can, press it down upon the filler and close the cover tightly. This will prevent your remaining filler from drying out.

When applying filler to the wood, always keep it well stirred and brush it thoroughly into the pores of your wood surface. Brush crosswise of the grain and then straight with the grain. Do not wipe it too soon nor allow it to get too dry. When it begins to look dull and is still wet on the underside, wipe up with jute, hemp, burlap or tobacco cloth. This should be done in circular motions, wiping it well into the pores. Clean up with the grain, using soft cloths and being careful not to pull any filler from the pores.

All filler work should be allowed to air dry at least 24 hours* in a well ventilated room, with the relative humidity at about 45%, before any finish is applied. Your work is then ready to take any finish that you may be using.

*Faster drying fillers, especially those for force drying, are now available.

Bleaching Directions Free

L. R. van Allen Co., manufacturers of bleaching materials, Box 3610 Merchandise Mart Sta., Chicago, Ill., has had printed on three sheets 6x9-in., information about directions for using Blanchit wood bleaches. These instruction sheets are available for pasting on the wall, bulletin board or any convenient place in the finishing room; and after they are pasted in position or framed they can be protected with a coat of shellac, varnish or lacquer.

Free Booklet About Pale Resin

A 12-page booklet containing technical data on "Flexalyn," a pale-colored, tacky, translucent, semi-solid resin, has just been issued by Hercules Powder Co., Wilmington, Dela. Table of physical properties and typical formulations are included.

Properties of the material, particularly its miscibility with water-soluble colloids such as starch, casein and glue, indicate its value in protective coatings, casein paints, wallboard coatings and lacquers.

Autovent Fan & Blower Co. Purchased by Nelson Corp.

The Herman Nelson Corp., Moline, Ill., announces that it purchased on July 1, the entire assets and business of the Autovent Fan and Blower Co., Chicago, Ill. The business will be operated as the Autovent Fan and Blower Division of The Herman Nelson Corp. The complete line of Autovent products will continue to be manufactured in the Autovent Division in Chicago.

Included in the Autovent line are a complete range of sizes of centrifugal blowers from 6-in. in diameter to 72-in. in diameter, in both forwardly and backwardly curved blade designs, and a complete selection of propeller exhaust and ventilating fans from 12-in. in diameter to 72-in. in diameter.

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TYPE OM SPRAY GUN—Light in weight, compact. Operates as production unit for continuous service or for touch-up work. Features "Hollow Air" atomizing principle. Top efficiency with all types of spray material.

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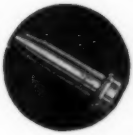

MILBURN CUTTING AND WELDING TIPS—Made of special rolled copper and embody outstanding features to give high efficiency, longer life and lower consumption of gas. Interchangeable.

Write for complete catalog of paint spray equipment, welding and cutting apparatus and regulators.

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"A Replacement for Zinc"

A timely answer to the problem of licking corrosion without zinc-coated metal is given by Roxalin Flexible Lacquer Co., Elizabeth, N. J., in its statement that "Roxaprene, a corrosion-resistant speed synthetic, provides superior performance to galvanized metal at a fraction of the processing cost."

The company further states that when immersed in 2% caustic solution, unpainted hot dip galvanized steel shows corrosion in as short a time as 50 hours, whereas Roxaprene-coated steel is unaffected at the end of 600 hours. Roxaprene showed signs of failure only after 96 hours in the same dilute hydrochloric acid solution that ate through galvanized coatings in 2½ hours.

And, because Roxaprene applies like the paint finishes in general use (by dip, spray, or roller coat) it requires no special equipment; it air-dries quickly or may be force-dried in a still shorter time. This production facility of Roxaprene has been found to eliminate much of the extra time, handling, and additional processing involved in galvanizing.

Prepares Glossy Surfaces For Refinishing

Wilson-Imperial Co. (Lingerwett and Wonder-Paste removers) 115 Chestnut St., Newark, N. J., announces a new liquid preparation designed to eliminate sanding of glossy or enameled surfaces before finishing.

This new product, Imperial Wil-Bond, permits the finisher to prepare and clean the surface in one easy operation. A clear liquid, Wil-Bond is applied with a rag, making it possible to get into moldings and crevices more easily than with sandpaper. It not only deadens the gloss but sets up a slight "tack", which causes the new finish to bond tightly without crawling or pulling away. Wil-Bond removes all dust, grease and wax.

New . . .

MATERIALS SUPPLIES EQUIPMENT

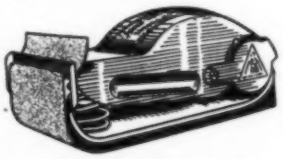
If the surface to be refinished is clean and free from grease, an excellent bond can be obtained merely by adding 4-oz. of Wil-Bond to a gallon of enamel, varnish, etc.

Finishers will find this new product of value in reducing labor time on many refinishing jobs, and it eliminates the annoying dust caused by sanding.

Hand Sanding Block for Wet Sanding

A patented block especially designed for holding abrasive paper in tightly stretched position over a flexible neoprene pad, for sanding dry or with water, gasoline or oil, is announced by Behr-Manning Corp., Troy, N. Y.

It is called the "Speed-Wet Sander." It has a magazine in which is rolled a reserve supply of abrasive paper so that once it is loaded, the workman can continue sanding a long time before finding it necessary to reload the block with new paper. When the surface of paper being used becomes dull or unsuitable for further service, the workman pauses for a moment, unfastens a clamp, pulls new paper into position, clamps it, tears off the sur-



Has neoprene replaceable pad and a magazine for reserve supply of abrasive paper.

The Beginning of the FINISH

Whether it's people or products, finish is an important factor in meeting the public because first impressions are usually lasting impressions. Carefully groomed people are automatically classified as successful . . . well finished products are automatically classified as quality merchandise.

That you may capitalize to the utmost on first impressions so far as your products are concerned, we invite you to use the facilities of our creative studio. Let us analyze the finish of your products and submit our ideas for consideration. There is no charge to reputable concerns for this service.

ROCKFORD VARNISH COMPANY

Manufacturers of Finishing Materials

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plus and proceeds with his work. He repeats this procedure until all reserve paper in the magazine is used. The block fits his hand comfortably and he can use it on flat or curved surfaces. The neoprene pads, which support the abrasive paper, are replaceable.

Perspiration Resistance

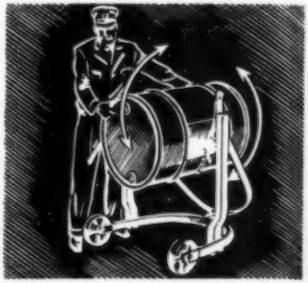
One of the most difficult requirements in the formulation of clear lacquers is to get perspiration resistance combined with proper adhesion and just the right gloss and clarity. According to a letter from the Zapon Division of the Atlas Powder Co., Stamford, Conn., Zapon's XL-516-EE meets these specifications so that flashlights and similar objects can be finished to withstand the handling and wear and tear of general service. Trouble with plated and solid metal flashlights is eliminated. Flashlights finished with XL-516-EE, demonstrated in New Orleans and other parts of the South, stood up as they should.

Drum Handling Device

"Barrel-Lift" is the name of a new barrel or drum-handling unit which lifts, moves, rotates and tilts most types of drums or barrels. Its structural and tubular steel frame combines strength with light weight (approx. 105-lbs.) for long easy operation.

To lift a drum standing on its end on the floor, the lift is brought into position and the drum is cinched in the lift saddle. This saddle is brought down to raise the drum from the floor. In this position the lift rolls on its wheels, the handle being used for steering. Farthest downward movement of the handle places the drum at its highest position where it can be rotated to agitate its contents or tilted to dispense the contents. When a drum is released after tilting, it returns to upright position to prevent dripping of contents.

The lift accommodates barrels or drums of approximately 55-gallon capacity. It is available in two types—drum-type for parallel-side drums, and barrel-type for curved barrels. Both types are equipped with automatic safety locks. Width between wheel centers is 30-in. A product of the Falstrom Co., Passaic, N. J.



Rotating the drum to agitate its contents.

New Baking Enamel

The P. D. George Co., of St. Louis, Mo., announces a dipping or spraying baking enamel which, so far as the company can see, will not be affected by the current raw material market.

This finish is offered to replace chromium and baking enamels, rendered impractical or unavailable due to defense demands. It is the result of experiments in formulating finishes for some of the country's largest manufacturers.

This new enamel is available in all colors, including white. It has remarkable draining characteristics, unusual gloss, superior color retention, will not scratch easily, and one coat covers beautifully, rendering a smooth wax-like finish that will stand extreme wear and weather abuse. It is free of the characteristics of other comparable finishes which have a tendency to thicken, "liver" or disintegrate in the dipping tank.

It is thinned with oleum spirits—a safe economical thinner—and will bake out in 15 minutes at 300° F.

Enemy DEFENSE

Planes and bombs are not the only dangerous enemies which come from the air as many a manufacturer of industrial products has learned to his grief. Rust . . . corrosion . . . tarnish . . . are all potential enemies to a product not well protected with a durable finish of some sort.

EGYPTIAN FINISHES, Lacquers and Synthetics, are the perfect defense against these elements so deadly to the manufactured product. Not only are these finishes durable and long wearing but they lend a certain eye-appeal which goes a long way in helping to increase sales.

We would like to tell you more about EGYPTIAN FINISHES and how they can help you in your finishing problems.

THE EGYPTIAN LACQUER MANUFACTURING CO.
ROCKEFELLER CENTER NEW YORK

EGYPTIAN FINISHES

EGYPTIAN Superior FINISHES

Leather-Like Finish for Wood

Modern finishes in fine furniture often incorporate the use of leather for portions of table tops, coffe tables or trays. According to an announcement, The Glidden Co., Cleveland, Ohio, has developed an imitation leather finish that can be used advantageously in such a schedule.

The wood is prepared in the same manner as bringing up an ordinary wood finish through the lacquer sealer coat. The work is then masked and the leather stipple is applied. The heavier this coat is applied the more coarse will be the leather grain effect. The stipple should be produced by using a round stipple brush that is slightly worn.

A harmonizing glaze is wiped into the stipple coat after it is dry and a coat of flat lacquer brings the finish to a deep rich leather effect.

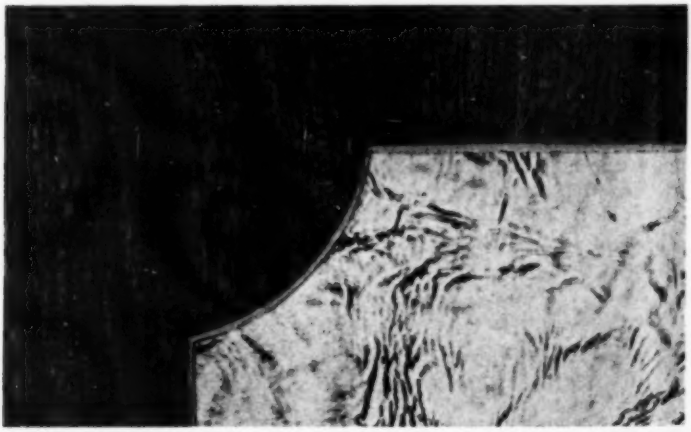
The panel finished in the grained leather is produced in the manner just described, to the point of glazing. No glaze is used, but a medium colored graining ink is applied by using an actual piece of leather as a graining plate. The leather is affixed rigidly to a panel and inked in the same manner as when a copper graining plate is used. The impression is taken from this leather with a gelatin roll and transferred to the previously stippled and ink-toned surface, thus producing an effect closely simulating real leather. Here again the final coat is a satin-sheen flat lacquer.

This new type finish is available in tones that are harmonious with wood colors ranging from bleached blond through Swedish Modern, honey, harvest and wheat, to conventional mahogany and walnut.

Acid-Proof Apron

A new protective apron, completely different from the conventional oiled duck, rubberized cloth and "synthetic" types, is announced by American Optical Co., Southbridge, Mass. The material of this new AO Protectocote provides exceptionally effective protection against acids, oils and greases.

In addition to protecting the worker's clothing the Protectocote guards his person against contact with industrial compounds and liquids that cause skin diseases and discomfort. It resists heat and will not burn. Al-



Sample panel finished in prima vera with reproduction of leather overlay and gold inlay.

Neither STERILIZATION nor DEEP DRAWING can DULL or DAMAGE this BRILLIANT BLACK FINISH

Jet-cote

FOR SPRAY, DIP OR ROLLER APPLICATION TO METAL

Jet-Cote is a bright black metal coating that stays black and brilliant through all the abusive processes of fabrication . . . including deep drawing and sterilization. It can be used directly on metal without sizing. Ask for details.

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WAREHOUSES: BOSTON : BUFFALO : DETROIT : NEW YORK

though very tough, it is also light in weight, assuring both comfort and durability. It's made in two styles and 11 sizes.

The Protecticote resists the following: oils, tar, greases, acids, chemicals, paints, varnishes, lacquers, cutting fluids, solvents, kerosene, gasoline, creosote, naphtha, caustics and alkalis.

Spede-Var Has Merits

"Spede-Var", as announced by the Reliance Varnish Co., Inc., Louisville, Ky., produces a high-solids, finishing coat of unusual body, toughness and print resistance, combined with fast drying. The manufacturer claims the following merits for this new material:

1—Fast drying
2—Varnish body
3—Low unit cost
4—Print resistance
5—Extreme toughness
6—Water resistance
7—Liquor resistance
8—Heat resistance
9—Mar resistance

According to the directions, "Spede-Var" should be used as it comes, without reducing; it should be stirred well before using. Finishers are ordered to not add any material to "Spede-Var" —either a thinner or any other finishing material. It should be applied over lacquer sealer or lacquer. It should not be applied over oil or varnish sealer or varnishes of any sort.

"Spede-Var", it is claimed, will "free pack" in one hour, and "tight pack" in five hours. It should be allowed five hours drying time before rubbing and polishing.

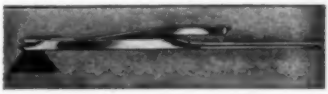
Pencil Finishes

We may not realize that refillable lead pencils get more wear and tear than is common to most objects. They are handled with sweaty fingers; are subject to severe abrasion every time they are put into or withdrawn from a pocket. The clip snaps when they are removed from the pocket. Shaped edges get excessive wear.

Information from the Zapon Division of the Atlas Powder Co., Stamford, Conn., states that Zapon's S-218 Duranite, black, white, and a full range of colors, may be applied on these pencil barrels in one coat and baked to give a finish which really stands up. In the finishing of these metal pencils during the process of manufacture, it is necessary to cut off a portion of each end of the pencil after the finish is applied. This is another place where the S-218 finish stands up without shattering or dragging.

Vacuum Lifter

A convenient tool for quickly and safely picking up and stacking or changing the position of sheets of sheet metal, thin plywood, fiber, etc., finished or unfinished, to avoid harm or damage to the surfaces or to the



Length, 15-in.; height at cup, 1¼-in.

workman's fingers, is offered by the Industrial Products Co., 2705 N. 8th St., Philadelphia, Penna. It is built to lift and hold parts securely, releasing them instantly when the vacuum is broken by the operator.

Celophane Tape and Dispenser

A new bulletin illustrates and describes some of the uses and possibilities of "Texcel" the strong, flexible, transparent adhesive tape made and sold by the Industrial Tape Corp., New Brunswick, N. J. Dispensers for this tape, which adheres instantly without moistening, are also illustrated in the bulletin.

Temperature Control Instruments; Wheelco Catalog

A 12-page condensed catalog illustrating and describing a variety of temperature control instruments and auxiliaries has been published and is ready for free distribution by the Wheelco Instruments Co., 1933 S. Halsted St., Chicago, Ill.

FINISHING ROOMS

HAVE BEEN STREAMLINED

TOO

No industrial field has seen more radical and frequent changes in the last decade than the paint industry.

And these changes are *constant,* because of constantly new developments in improved materials and methods.

Are you taking advantage of "streamlined" materials and methods to effectively reduce finishing costs, time schedules and handling costs? Your Berry Brothers' representative can tell you—without obligation.

He is a specialist in finishing room problems and materials and will bring you the combined industrial experience of the entire Berry Brothers' organization. Call him now.

BERRY BROTHERS

Industrial Varnishes • Enamels • Lacquers

DETROIT, MICHIGAN • WALKERVILLE, ONTARIO

JERSEY CITY • BOSTON • CINCINNATI • CHICAGO • ST. LOUIS

Enameling Lamp Reflectors

We have had an inquiry on putting enamel finishes on sheet steel and would like to know if you could be of value to us in this instance. The customer is making lamp reflectors of sheet steel for flourescent fixtures. We would like information as to the equipment and type of materials needed, length of time needed, and expenses involved. To my knowledge, the sheet steel will need a cleansing first, and then an undercoat, and then an enamel which will have to be baked. —L. F.

To solve your customer's problem with any degree of economy, accuracy and satisfaction, requires that a qualified finishing engineer be on the job, so that he may become exactly familiar with what is required in the way of quality and quantity of production. Several of the leading manufacturers of finishing materials that you see advertising in INDUSTRIAL FINISHING Magazine, would probably be glad to send a qualified man to solve the various problems involved.—ED.

How Do You Clean Conveyor Hangers?

Our furniture finishing department is conveyorized, with an overhead chain conveyor carrying long angle-iron hangers which support trays that hang close to the floor. Case goods are placed on these trays. In repeatedly passing through the several spray booths during the finishing process, these long angle-iron hangers become heavily coated with overspray. Sometimes it builds up to ¼-in. thick. Our conveyor passes through two ovens and as a result, this accumulation of overspray is baked on.

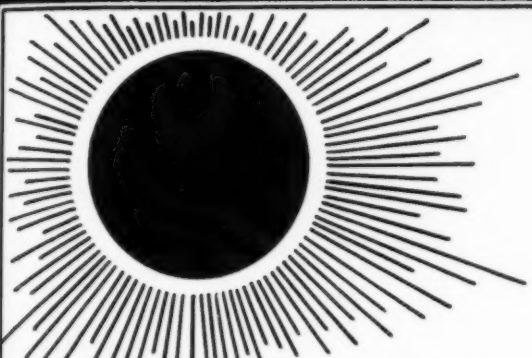
What we would like to know is how to remove these accumulations of material easily and quickly or how to prevent them from forming on the hangers. We have tried different cleaners but haven't found any that would remove these accumulations of material. We have also tried to remove these heavy coatings by scraping, but haven't been very successful.

We know of one concern that removes the hangers from the conveyor chain and puts them in a boiling hot caustic solution to remove the accumulation of varnish, filler, etc. However, this method is quite expensive as it takes a lot of time to remove the hangers from several thousand feet of conveyor chain. I am wondering if any of INDUSTRIAL FINISHING'S readers are in position to tell me how to solve this problem satisfactorily and economically.—W. J. B.

If you can not find a satisfactory stripper solution or strong varnish remover to apply by brush or spray at room temperature, we suggest that you try wrapping the cleaned hangers with paper and securing

Questions; Answers

Questions are welcome and will be answered promptly by mail. Readers are invited to prepare and send in additional information relating to any of these questions and answers.



Something NEW under the sun

Stanley found it! And YOU can cash in on it! It's 1617 . . . the ORIGINAL crystal clear, non-spotting lacquer which practically eliminates "spotting out" on cast metals and crystal spotting of oxidized finishes. For performance . . . exceptional adhesion . . . and resistance to exposure without discoloration . . . STANLEY 1617, in the long run, is just about the most economical lacquer you can buy. Try STANLEY 1617 on YOUR product . . . under YOUR conditions. Order a five gallon testing sample TODAY. It will be billed at the drum price. Address Department "G".

THE STANLEY CHEMICAL CO.

EAST BERLIN CONNECTICUT

Lacquers · Enamels · Synthetics · Japans

A SUBSIDIARY OF THE STANLEY WORKS NEW BRITAIN, CONN.

There's
BEAUTY
here, too!

. . . . . And it's tested to take the knocks!

A production test of the Mar Proof finishing system will assure you of its 100% satisfaction to the furniture industry. You will find, as others have, that Mar Proof gives a "hard as nails" finish . . . provides enduring beauty and ends finishing "headaches." It's the proven lacquer for maple, gum, mahogany and other cabinet woods. Made in Clear Gloss and Satin Finish. . . . Give Mar Proof your *toughest* test!

We recommend Mar Proof Lacquer Sealer for first coat.

THE SCHAEFER VARNISH CO., Inc.
Louisville, Ky.

Write for FREE Working Samples

Schaefer's
MAR PROOF
LACQUER

same with tape or suitable fasteners. You might try using long strips of narrow wrapping paper of any convenient width—5 or 6-in. wide—and wrap it spirally around the hangers, starting at the bottom and moving upward to the top. This would have to be fastened securely with tape or metal fasteners of some kind so it would not let loose. When this paper covering becomes loaded with finishing material it could be cut loose with a sharp knife, cutting it along its full length, as unwinding it would be a messy job. This finish coated paper could be disposed of the same way as you dispose of paper spray-booth linings. Another suggestion is some kind of coating that could be easily wiped off. The Editor will welcome other suggestions about how to handle this problem.—ED.

To Finish Picture Frame Moldings

Will you please advise us of some manufacturers who are putting out painting equipment for molding and cornice work?

Picture molding frames and cornices are finished different than some other wood commodities. The finishing coat on picture moldings and cornices can be put on by spraying but the priming coat, which takes a water primer rather than a synthetic or lacquer material, is put on by an entirely different piece of equipment.

Now we know the usual methods of coating different products, but is there such a piece of equipment as is called "contusion" or a similar name, which we cannot properly tell you as we do not know?

Perhaps you could give us some

names that you know of manufacturers of dipping or flow coating equipment and we would write to them. We feel sure you must know of some manufacturer of this sort of equipment.—W. H. Co.

We wonder if you have in mind the application of a coat of whiting in soft paste form to build up a smooth base coating for succeeding coats of decorative finish? We understand that this is accomplished, in some factories, by having the moldings pass through a machine lengthwise (being fed through by rollers) wherein a supply of this soft paste is flowed on. The paste is pressed to the wood surfaces and formed to a perfectly smooth contour of the molding by passing the coated molding through a set of stationary steel dies. These coated moldings are then carefully laid aside to dry. We do not know who manufactures equipment of this kind. Perhaps it is made only on special order. Can some readers offer any further information?—Ed.

Shortages Do Exist for Plastic Materials

I note in the June issue of your magazine Industrial Finishing, in an editorial on page 91, a discussion of the use of plastics to replace some metals. Paragraph No. 2 begins, "There is no shortage, either of plastic compounds or the raw materials from which they are made."

It is, of course, possible that when this was written there was no shortage of either compounds or raw materials, but I recently sat in at a meeting in Washington called by the O. P. M. to discuss a very serious shortage of formalde-

FORM - A - ROC

We offer to all industries equipped for baking finishes this highly perfected, heat-converting, synthetic enamel.

FORM - A - ROC

We have combined to an optimum degree the necessary qualities of tremendous hardness, great adhesion, smooth lustrous gloss, and freedom from haze, discoloration and wrinkling.

FORM - A - ROC

Baking schedule is of great flexibility, permitting from 5 - 50 minutes at 250 - 375° F.

FORM - A - ROC

No matter which of the present worthy finishes of this type you may be using or planning to use we sincerely recommend that you investigate

FORM - A - ROC

MADE BY

THE VARNISH PRODUCTS CO.

5208 Harvard Avenue

CLEVELAND, O.

WHILE THEY LAST

RANDOLPH "Calls The Roll" of Synthetic Gum Finishes (S.G.) in a new descriptive folder and includes some finishing hints that no shop should be without. Send for your copy today!

Dopes—Thinners
Lacquers—Synthetics

RANDOLPH
FINISHING PRODUCTS CO.
Carlstadt New Jersey

Look at This SPRAY GUN VALUE

CROWN
TYPE
"SC"
$15
COMPLETE

Full Fluid and Spray Width Control . . . Convertible from bleeder to non-bleeder type. Self-aligning Spray Head . . . Cover Assembly adaptable for quart aluminum container or standard pint paint cans . . . Ideal for lacquers, enamels, etc. . . . Write for catalog.

CROWN SPRAY GUN MFG. CO.
1218 Venice Blvd., Los Angeles, Calif.
Warehouses in Principal Cities

hyde from which synthetic resins and molding compounds are made.

I think it might be advisable to correct this statement due to the very serious condition that is facing all producers of synthetic resins at this time. There is a tremendous backlog of orders that is being delayed, due to a shortage of formaldehyde, and the Government bureaus are seriously concerned with this development. I would like very much to refer you to Mr. J. B. Davis, Office of Production Management, Washington, D. C., who is the official representative of the paint, varnish and lacquer industry at O. P. M.

Please do not look upon this letter in the nature of a complaint but merely as an effort to present a true picture of the conditions under which synthetic resin manufacturers are operating.—C. HOMER FLYNN, Secretary, Synthetic Resin Manufacturers Association.

Trademarks on Steel Bleed Through

Could you help with this problem? I refer to the stamped trademarks, usually of blue dye, on galvanized iron. You can wash them with gasoline, lacquer thinner or alcohol; or you can sand them, steelwool them, grind them with a hard wheel; but in spite of all these precautions they will inevitably bleed through white lacquer, aluminum or what not.

Why can't the steel makers use Prussian blue, lamp black or some kind of non-bleeding material for marking? We would buy the iron even if the trademarks were left off. As it is, they are an awful "headache".

Shellac will sometimes stop the bleeding but is not sure or prac-

FASTER, better finishing . . . . at lower cost!

Sands plaster (filler) coat 50 to 60% faster. Produces a perfect smooth surface.

Cuts re-finishing time in half. A saving of 8 hours per coach.

The EASY is standard equipment in many plane and propellor plants.

On wood, metal, plastic and fabric applications.

The EASY Reciprocating Electric Sander

This production proven unit has been adopted as standard equipment by industrial leaders everywhere. By eliminating slow, tiresome, expensive hand sanding and rubbing operations on practically every type of material and finish, the EASY has earned the respect of hundreds of executives and workmen.

PROVE the EASY in your plant — Write for literature.

Detroit Surfacing Machine Co. 7438 W. DAVISON DETROIT, MICH.

DEFEND *against* PRIORITIES

CHANGE TO BLACK BAKING JAPANS

ALUMINUM—ZINC—SYNTHETIC RESINS—LACQUER THINNERS for the Galvanizing, Chromium Plating, Aluminum Coating and Synthetic Coating industries, with or without priorities, are finding shipments being delayed or indefintely halted.

Black Baking Japans, Primers and First Coaters being plentiful will solve your finishing problems economically and without costly delay in unusual as well as peace times.

Our facilities are at your service to help you market your product ahead of competition. Send your finish specification problems today for willing advice and comment.

THE AKRON PAINT & VARNISH CO.

AKRON, OHIO *Specialists for 63 Years*

WAX FREE

NON-INFLAMMABLE

REMOVER

- Quickly removes all kinds of finishes and coatings.
- Saves time, labor and material.
- Easy to apply—no after cleaning.
- Doesn't raise grain nor discolor.

SPECIAL OFFER 1 gal. testing sample at drum price F. O. B. Newark, N. J.

(Also manufacturer specially formulated non-inflammable coatings.)

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.

331 MADISON AVE. NEW YORK, N. Y.

LIKE MAGIC..

S-I-P CLEAN-UP POLISH quickly removes finishing room dust, dirt and fingermarks. In the final clean-up operation this polish leaves an attractive finish which is dry and oil-less. It cleans faster and goes further.

Write NOW for a free demonstration sample to make your own tests.

Gentlemen:

Please send us a FREE demonstration sample of S-I-P CLEAN-UP POLISH.

Firm Name.....

Address.....

City.....State.....

Standard Industrial Products, Inc.

EVANSVILLE, INDIANA

tical when the article is to be subjected to heat.

I have fought these trademarks for years and I feel confident you or some of your readers will have some suggestions to offer. I would appreciate any advice you can give me.—W. H. C.

This same problem was brought up back in March 1925, and again in August 1929 issues of INDUSTRIAL FINISHING, but no remedy, other than what you have already tried, was offered. The suggestions then included: 1) Grinding off the marks with an abrasive wheel; 2) sanding them off; 3) covering same with aluminum bronze paint; 4) covering the area with white shellac.

Perhaps a bleaching compound, metal cleaner or stripper would remove the objectionable marks and leave no harmful trace of the treatment. We suggest you try something of this kind.

We agree with you that the steel manufacturer could and should use some marking that would be easy to remove and not harmful under a coat of finishing material. Perhaps some of our readers may have other suggestions.—ED.

Plant Painting Book Free

"Facts about White Paint and Better Illumination" is the name of a new illustrated brochure just published by The Sherwin-Williams Co., Cleveland, Ohio. Containing 26 pages and made up in 8½ x 11-in. data-file size, the new blue book analyzes the effect of paint on lighting and illumination, showing by chart and by photographs how scientific plant painting contributes to efficient illumination, better working conditions, and greater output.

Also included are charts showing the coverage of various types of paint, the loss in reflection value with time, and special Spectro-Photometric comparisons of various colors and types of plant maintenance

Plastics in Industry

USE of plastics in the national defense program, and in industry generally, is increasing to a large degree, but we must understand that there are limits to which plastics may go in replacing metals and other scarce materials, it was declared recently by L. B. Gillie of the DuPont Co.'s Plastics Department.

"Plastics have replaced in many instances such basic materials as wood and metal," he said. "But, in almost every case the reason for their use up to now has not been a shortage of other materials, but the result of a desire to give to everyday products one or more of these features: new color, new beauty, lighter weight, greater durability, greater economy.

"Now that the need for metals is so great, plastics will be more largely used in fields where they can suit the purpose, releasing the scarce materials for defense purposes."

Popular attention centered on plastics today, together with current prophecies of their future, "sometimes verging on the fantastic," is largely the outgrowth of new and spectacular developments which have been crowded into a very brief span of years, said Mr. Gillie.

"At least 13 types of plastics are now on the market. New manufacturing methods have lowered costs. While no accurate figures are available, it is estimated that more than 160,000,000-lbs. of plastic materials are now being produced annually. That is well over a pound of plastic for every man, woman and child in the country," he said.

As yet no universal plastic exists, Mr. Gillie declared. No single plastic possesses all the properties

WALKER'S MODERN PRODUCTION FINISHES

Years of laboratory research have developed Walker's outstanding line of Modern Production Finishes. Every product has been tried and proven under the exacting conditions of production use. We list them here for your consideration.

- **Chromate Primers**
- **Fillers, Surfacers and Undercoaters**
- **Synthetic Enamels to fit any production schedule. Air dry or short bake.**
- **Chlorinated Rubber Enamels**
- **Lacquers for every purpose**
- **Wrinkle Finishes and a large variety of other decorative, protective and specialty finishes.**

Walker's Modern Production Finishes may offer an immediate solution to your present finishing problem. A wire, letter or phone call will receive prompt attention. Remember to "Call on Walker."

H. V. WALKER CO.
MODERN PRODUCTION FINISHES
Elizabeth, New Jersey

Pulmosan R-151 Chemical Respirator

"Double Feature" Protection

For highest safety and lowest service cost, use the R-151 Chemical Respirator. Its chemical cartridge purifies fumes—extra filter prevents clogging. Thus, cartridge lasts longer, needs less replacement. Give your spray men the R-151 Respirator for safety, comfort, durability. Get prices.

PULMOSAN SAFETY EQUIP. CORPORATION

Dept. IF, 176 Johnson St., Brooklyn, New York

GRAINING PLATES
bring out the
QUALITY *you*
have built in
YOUR PRODUCT

AMERICAN RICHWOOD PRODUCTS CO.
(FORMERLY AMERICAN ELECTROTYPE CO.)
Graining Plate Division
184 E. MASON ST. MILWAUKEE, WIS.

desirable in a plastic, just as no single metal or alloy possesses all the properties desirable in a metal.

Tracing the growth of plastic applications in various industries, Mr. Gillie said the automobile industry, which has employed plastics since its early history, has in recent years rapidly expanded the utilization of these materials until it is now the industry's largest single dollar outlet.

Force Drying to Speed Production

TODAY MANUFACTURERS in practically every industry are seeking and trying methods that offer possibilities or promises of speeding up their production. This is especially the case in finishing rooms. Here in our laboratory-studio we have had many requests for means of speeding up different operations, either by forcing the drying with heat or by the use of faster-drying solvents.

After many trials and experiences, I have worked out a force-drying system whereby furniture that receives two final coats—and even a glazing—can be completely finished, from staining to (but not including) rubbing, in 7¼ hours. In my system I use special fillers, sealers, etc. By special, I don't mean more costly, but they are what I have selected from our large line of products to be workable in this system. Our oven carries an even heat of 120°F.

For stain, I use our "permanent tone," sprayed on as an average coat. The stained piece of furniture is immediately put in the oven for 15 minutes; then it is pulled out and cooled for eight minutes.

Next comes a filler of the baking type, which is dried in the oven

for 90 minutes; then cooled eight minutes.

Over this filler I apply a glazing sealer which is force-dried for 15 minutes and also cooled for eight minutes. As you will note, each cooling period in this system is eight minutes. This is timed to suit the space between ovens on a conveyor system for which I planned this schedule of finishing.

Next, we apply our glaze and force-dry it 30 minutes, followed by the usual 8-minute cooling period.

This operation may "sound too fast" for most finishers, but it works fine for me. I am referring to the next application of sealer, which we force-dry for only 20 minutes. After cooling for eight minutes it is sanded. Next come our top coats. The first one is force-dried 30 minutes and cooled eight minutes. Then the final coat is force-dried 2½ hours and cooled 30 minutes before rubbing.

With this system I can produce an excellent clean-cut finish, with no greying of filler and no more than normal top-coat shrinkage, and I save two days time in the usual production schedule. — H. DEAN.

How to Make Enemies and Lose Customers

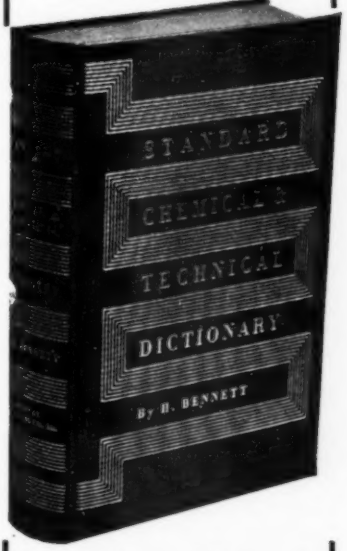
(To salesmen and representatives who call on foreman finishers.)

1—As soon as you have contacted the foreman or superintendent of the finishing room, give him plenty of that old high pressure. Tell him he ought to use everything *you* sell, and that all you are interested in is a *large order.*

2—Don't bother to find out the details of his problems or special

STANDARD CHEMICAL AND TECHNICAL DICTIONARY

by H. BENNETT, F. A. I. C.



Gives condensed definitions. Includes about 25,000 definitions. Synonyms, trade names and cross-references are included. Definitions and data are the latest and authorative. Abbreviations, symbols and contractions used in chemistry, physics, etc., are given—also the general official rules for naming of organic chemical compounds and their pronunciation. Contains 638 pages.

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INDUSTRIAL FINISHING

222 East Ohio St. Indianapolis, Ind.

NOW Ready to Ship This New Cesco No. 602 Healthguard Abrasive Mask and Cesco Paint Spray Mask!

NEW comfort and improved construction features that will help you maintain production at high efficiency and reduce industrial hazards. Faster, better protection for sandblast and paint spray operations.

New Cesco No. 602 ABRASIVE MASK (above) works with high or low pressure air. Highly efficient in silica, metallic and mixed dusts. New approval No. 1918, U. S. Bureau of Mines.

Cesco PAINT SPRAY MASK

Made in light muslin, rubberized cloth, or heavy khaki. Hood, attached to cap, fits snugly, protects shoulders. Big plastacele window for wide-range of vision. Fitted with tube for compressed air if desired.

Get Circulars—Prices—Full Details—Write

CHICAGO EYE SHIELD CO.
2367 Warren Blvd. Chicago, Ill.

needs. You are a medicine man with a cure-all.

3—If he doesn't give you an order immediately, act hurt and abused and tell him that you don't know why you bothered to see him anyway.

4—Snoop around the factory. That is one way of letting him know how much you trust his word.

5—If he has tried your sample and has any complaint to offer, remember it is always his fault. Don't discuss it with him. Go to the higher executives and tell them that he must be nuts!

6—Bluntly criticize everything he is doing. If you were running the department you would do a much better job.

7—Put on a sob act. Your wife and children will starve if you don't get this order today, and he will be the cause of it all.

8—Take up plenty of the foreman's time by discussing things not related to business. He has plenty of time and nothing to do, so just make yourself at home for a nice long visit.

9—If he tells you politely but firmly that he cannot spare you any more of his time today, disregard it and "dog" his every step.

10—Make many rash promises which neither you nor your company can back up.

If you follow these simple rules, there is no reason under the sun why you shouldn't become a super-unsuccessful salesman. — SY KOLOGY.

Radiant-Heat Baking

THE advantages and disadvantages of the radiant-heat process of baking organic finishes were discussed from the standpoint of the finisher by G. Klinkenstein, Vice-President and Technical Director of Maas & Waldstein, Newark, N. J., in a paper recently presented to a convention meeting in Boston.

Radiant-heat baking is best suited for finishing large quantities of single or similar products, Mr. Klinkenstein said. It is not well adapted for the use of manufacturers who must bake many different kinds of products at the same time, or who are constantly changing the character of their products.

The process is a rapid one but it is economical only when the baking equipment is specifically designed for the work it is to do; if much of the energy radiated by the heat-

ing lamps is wasted, the cost of current may become prohibitive

The finishing material used must also be selected with special care in order to take full advantage of the speed and other features of the baking process; to use a finish that bakes slowly means both a decrease in production and an increase in cost of finishing each unit.

A special problem arises due to the fact that black finishes bake more quickly under radiant heat than do white finishes of the same general composition, with other colors occupying intermediate positions. This means that, for a given radiant-heat installation, finishes of different colors must be so formulated that all will bake properly in the same time; otherwise, the baking equipment will have to be changed to suit each color.

Similarly, products made of sheet metal bake more quickly than do those made of solid metal, and if both kinds of products are to be baked in the same oven, the baking qualities of the finish used on each kind must be carefully adjusted to the conditions.

When a radiant-heat baking oven is being installed, and also when the product or the finish to be baked in it is to be changed, the finish manufacturer should always be consulted in order to secure maximum operating efficiency.

The advantages of radiant-heat baking, where applicable, were summed up by Mr. Klinkenstein as follows: quick baking, especially suited to high-speed mass production, low installation and maintenance costs, ease and flexibility of installation, small space required, comfortable working conditions, and high degree of fire safety.

Machine tool shipments for May, 1941, are estimated at $60,800,000 as compared to $60,300,000 for April and $57,400,000 for March. Shipments for May, 1940, were estimated at $32,800,000.

The appointment of E. D. Horgan, as General Sales Manager, is announced by Directors of the Roxalin Flexible Lacquer Co., Elizabeth, N. J. Mr. Horgan is advanced from Advertising and Sales Promotion Manager, which position he has held since 1937.

ORDER A GKS STANDARD TRUCK TYPE OVEN

FOR DELIVERY IN 4 TO 5 WEEKS

Delivered knocked down . . . easily assembled . . . complete with all necessary motors, switches, controls and safety devices . . . ready for operation. Standard units make rush delivery possible . . . as well as flexibility in size. Write for catalog.

George Koch Sons, Inc.
2122 W. Ohio Street
EVANSVILLE, INDIANA

Industrial FINISHING

Distributed monthly to finishing room and paint shop foremen, production superintendents and company officials of metalworking, woodworking and miscellaneous industrial plants where production finishing is a major operation in parts and products manufacture.

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Editorial

Mahogany Will be Available But Higher Priced

A 3-page letter to the trade, from Mahogany Ass'n., Inc., Chicago, Ill., reveals some interesting and timely facts about "The Mahogany Situation." Excerpts from the letter follow:

During the last quarter of 1940 and the first quarter of 1941, the buying policies of the furniture industry underwent a change. Heretofore, it was common practice to let the producer carry the stocks of raw materials. From this policy of hand-to-mouth buying the consuming industry began to anticipate requirements. If they couldn't cover from regular sources of supply, they looked elsewhere for stocks. This, in itself, was enough to develop a heavily accelerated demand while the pyramiding of inquiries tended to make this apparent demand much greater than it actually was.

In the meantime, this anticipation of future requirements was not uniform throughout the industry. Some firms were amply covered, some partially covered and some were caught short. Those who were caught short became alarmed and sometimes frantic in their efforts to obtain their immediate requirements. Thus it is that the consuming industry has done much to aggravate the situation caused only partly by increased demand but mostly by a change in buying policy. . . .

The timing also has been unfortunate. Last season's mahogany logs are fairly well used up, due to increased demand, and new logs are mostly dependent upon floods of the rainy season in the tropics for transportation to deep water where they can be loaded for the mills at American seaboard. These floods are not due until the summer months. "Deep water" logs are coming out now, but this supply is not sufficient to keep the mills running full time.

The situation has been further complicated by the sinking of vast quantities of ships and by the increasing demand for ocean tonnage for war purposes which has curtailed the available supply of ships for log transport and has tremendously increased the costs of such transportation. Time charter rates

have increased from 500% to 600% since the outbreak of the war. However, several charters have been made recently and it is expected that as logs reach deep water in the tropics, they will come forward to American seaboard in substantial quantities.

At present logs are still coming in from Africa in limited quantities, but more freely from Tropical America. The bulk of this year's production is still to come out. The arrival of mahogany logs on deep water is variable due to variability of the flood crests of the rainy season in the tropics, but a normal supply of logs is expected to be available for transportation this season. In the meantime substantial stocks of mahogany lumber and veneer are still available to help bridge the gap until there is a heavy flow of new production. However, there will be temporary shortages in favored items, in both lumber and veneers.

Present high costs, and probably still higher costs of ocean transportation, mean definitely that mahogany lumber and veneer prices will be substantially higher than the prices that have prevailed during the past several years. The mills cannot absorb these advances in costs, but if past record is an indication, nothing more than the full increase in costs and very probably something less than these costs, will be passed along to the consuming trade.

As the Editor sees it, this mahogany situation may stimulate any one or more of several possible trends, which will interest users of finishing materials. It may lead to an increase in the use of mahogany grain reproduction on plain wood, metal and composition surfaces.

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Furniture Buyers Are Asking More About Finishes

The average prospective furniture buyer of former years was not the discriminating purchaser in the sense that we know him today. The retail buyer usually asked but few questions of the retail salesman and invariably he readily accepted the salesman's answers as absolute truth.

Such is not the case today. The purchaser of a dining room suite does not merely ask to see a dark or light suite, "with a table large enough to seat six." Wider perusal of the ads and a broader education prompts him to ask more specific questions, such as: "Is the construction doweled or mortised?" and, "Is the finish acid-proof and will it resist heat?". Woe to the salesman who is hesitant or uncertain about replying to these questions, or the one who gives false information.

Perhaps if this more liberal education of the consumer continues, we may witness technical questions like the following: "How many hot and cold cycles will this finish endure?"; "How many abrasion strokes does it require to penetrate the film?"; "What number sheen is this suite?".

Most of the experienced salesmen agree that the discerning buy-

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er is the best for additional future sales.

Educated consumers are a big factor in improving finishes and the more we strive to educate the buying public with truthful advertising, the sooner we shall see a decline in costly reject refinishing. —N. H. VOIGT.

Solventless Finishing Materials

* Volatile organic solvents in finishing materials serve the single purpose of adjusting the working properties of the materials so that they can be applied. It would be well if such organic solvents could be eliminated. They are expensive and contribute nothing to the quality of the cured finish. They are more or less toxic and, with a few exceptions, are flammable and therefore their use must be attended with fire and health precautions. Finally—and this applies to present-day conditions—some of them are used as raw materials in or incidental to the manufacture of defense materials, including explosives, and there is the question of availability.

It may be, however, that we are seeing the beginning of the end of the use of volatile organic solvents in finishing materials—some types at least. Recent chemical research has evolved resinous materials that require no organic solvents at all. These materials are fluid in nature and cure to give films that are very interesting in their properties. They have not yet been developed to the point where they are offering competition to conventional finishing materials, but they have been used, with considerable success, on a small laboratory scale in certain impregnating operations.

Another possibility is the use of water as the adjusting agent, either as a true solvent or as a constituent of emulsions. Water japan—bituminous finishing materials employing water in place of the regular solvents—have been known and used in the past and it is possible that other finishing materials employing water will be developed and sold.

There has also been some work done on applying finishing materials in the molten state. This refers to investigations in spraying dry powdered shellac which is melted as it is passed through a flame. It would seem reasonable that this technique might be applied to other resins and even to dry mixtures of resins and pigments.

It is my belief that the search for cheaper and better finishing materials and methods, stimulated by the exigencies of the present defense efforts, will produce practical and usable solventless finishing materials. It is also my belief that the development of such solventless organic finishing materials will be

* Guest Editorial . . . Many readers can write an excellent editorial — two or three paragraphs that present a timely suggestion or valuable idea which will stimulate real thought on a live subject. The Editor welcomes guest editorials and pays for those that are published.

the most important advance in the finishing industry since the development of heat-converting synthetic resins.—J. G. S.

Overemphasizing Cost Cuts Produces Cheap Goods

* In this age of strong competition, when a difference of a few pennies in manufacturing cost may mean the difference between a profit or a loss on an item, there is a strong tendency to overemphasize cost reduction—to place it above quality. There is a growing habit, particularly among young men eager to make their mark, to ask first about any material or process, "How much does it cost", rather than, "How good is it?"

In some instances, those responsible for manufacturing costs even use this argument: "Sure, this process (or material) is not quite as good as the one now used, but it will save us a large amount of money which will more than compensate for the little sacrifice in quality." If this program is followed for any length of time, manufacturing costs will go down without question. The product will be inexpensive but there is also a good possibility that it will be cheap too.

Investigations have shown that, on the average, the cost of finishing is only a small part of the total manufacturing cost on an item. In some instances it amounts to only a few percent. On the other hand, the percentage of finish complaints received by manufacturers is often very large — many times larger than the percentage cost of the finishing. This points to one thing, namely, that there is a good possibility that there has not been enough money spent on the finish-

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By Ray C. Martin

The author takes up the raw materials that enter into the manufacture of these important finishes and includes laboratory formulations and testing, manufacturing methods, requirements of many types of finishes for various industries and products, methods of analysis, methods of applying finishing materials, chapters on furniture finishing and automotive finishing, a glossary of terms used in the industry with clear explanations of what they mean, and an alphabetical index of subjects covered in the book. Price $5.50 postpaid; cash with order.

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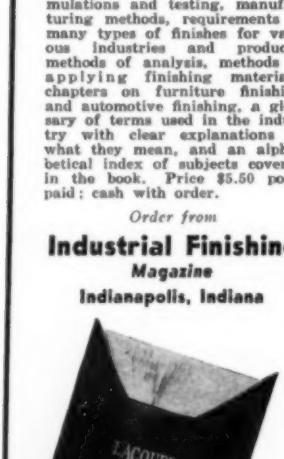

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ing—on the materials, equipment, checking, control, etc. Or, putting it another way, it is possible that materials and equipment have been judged in terms of dollars rather than in terms of quality.

To do a good finishing job, money must be spent. It is not necessary to waste money, of course. But, there is a minimum which must be held if acceptable quality is to be obtained. It would seem that, in the long run, it would pay to do a good job first, rather than lose what first appeared to be a saving by having to make replacements and care for complaints later on. —J. G. S.

Anticipate Future Requirements and Buy Accordingly

★ With conditions shaping up for the Defense Program, it is timely for manufacturers and users of industrial finishing products to look carefully into their probable future material requirements.

No longer may we feel safe in hand-to-mouth buying. We may suddenly find certain material supplies depleted, and there may be no way through which to supplement our supply. This is a time when industrial buyers must anticipate their wants for a long period ahead, even though it means securing additional storage space.

The purchase of finishes or other supplies in a quantity far beyond immediate needs may, in no sense, be called "hoarding." So far there are no restrictions, other than priorities, on the purchase of any supplies in any amount—excepting, of course, those items that are difficult to secure in sufficient quantities for defense needs. On the other hand, if any industrial plant has storage space far beyond its immediate or near future needs, the

company may be called upon to turn it over to the Government for defense requirements.

In the industrial finishing field there are certain raw materials used in the manufacture of finishes which are also a basic part of ammunition manufacture. In the case of some of these, the demand will soon exceed the supply. There is no question that we, as industrialists, will gladly give way to the defense needs.

So, as far as "hoarding" is concerned, we need not feel that we are antagonistic to the defense program if we anticipate our wants for some time to come and buy supplies far in advance of operation schedules. By anticipating our industrial needs, we are really aiding manufacturers of raw products to also anticipate their future needs. Then they can decide just how great a quantity of their products may go to non-defense sources, and how much they may be able to allocate to Governmental needs, which will and should take precedence over all private industrial requirements.

Hence, it seems to be just a matter of common sense for all of us to anticipate our needs for a year ahead, and to buy accordingly so that those at the source of raw material supply may also work on a schedule, not only to supply our needs but to see that such supplying does not in any way interfere with the national defense program. —C. D. Y.

Blast Cleaning Bulletin Free

If you have metal parts to dry clean and smooth up a bit, preparatory to painting, you will be interested in a new 8-page bulletin that illustrates and describes Ruemelin blast-cleaning cabinets. New designs and improved facilities are features of the blast-cleaning apparatus shown in this 2-color bulletin. Address requests for copies to Ruemelin Mfg. Co., 3860 N. Palmer St., Milwaukee, Wis.

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Letters from I. F. Readers

(Continued from page 8)

about one week. This is supposed to give a perfect aged appearance approximately the equal of a hand-rubbed finishing. We will appreciate it if you can give us information as to where this material can be secured.—A. Q. Co.

Can some reader help on this?—Ed.

Grease for Spray Booth Coating

Do you recall that sometime ago you advertised special grease for coating the insides of spray booths in order to save putting on paper every week? This grease allowed the workman to pull away the lacquer solids in one sheet every week. Will you please let us know who makes this material?—L. Co. (Chair Manufacturers).

Information supplied.—Ed.

Spraying Plastic for Protecting Surfaces

We read about a new spraying plastic which is used as a protective surface for practically any material or product. We are interested in getting

more detailed information on this and are writing you to learn whether you can refer us to a source of supply manufacturing this material, or whom we can write to give us the information required.—P. D. Co. (Advertising Necessities).

Perhaps you have in mind the "new spraying plastic for the protection of surfaces," as published on pages 66 and 68 of May 1941 issue of INDUSTRIAL FINISHING Magazine. This article refers to "Marlox" a product of Marley Chemical Co., 983 E. Milwaukee St., Detroit, Mich.—ED.

Graining Rollers

We have read the article, "More About Mechanical Graining", by Wm. B. Levy, beginning on page 79 of the June issue of INDUSTRIAL FINISHING. At the bottom of page 80, this article mentions the use and development of graining rollers made of synthetic rubber instead of gelatin.

We are interested in securing further information on these synthetic rubber rollers and where they can be purchased. Will you please advise us to whom we should write for this information?—I. R. Mfg. Co. (Enameled Iron Signs).

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Still More About Finish Salesmen

I read with interest the observation by J. M. J. in the June issue (page 92) to the effect that finishing foremen should make the best finish salesmen. In my estimation this is true because such a man must have ability and initiative, and also because he possesses a working knowledge of the goods he is trying to sell.

That few finishers ever become salesmen may be attributed to the fact they, as a rule, are fellows who quit school at an early age to go into factory work, and thus lack the self-confidence that is required to become a good salesman.

Regretably, we occasionally encounter down here (Arkansas) an agent who I classify as belonging to the Joe Blow type. Joe breezes in smoking a big cigar and, without a moment's hesitation, informs us that we are turning out very inferior work and there is only one remedy: Buy everything from him! It's that simple. Over our feeble protest he proclaims that if the Jones Hairpin works uses his stuff by the carload, surely we can use ten drums!

Poor Joe; he is eased out as gently and quickly as possible and, if he calls again, we are too busy to see him.

Now let's consider Bill Blank, who sells for another paint manufacturer. Bill won my heart the first day I met him—because he refused an order. It happened that we had need for a trifling amount of a little-used material that most plants do not fool with. Bill said, "I can sell it to you all right, but I advise you to order it from the —— Co. They specialize in this certain product and it's away ahead of our, or anyone else's."

Bill lost that order, but he has gotten many from us since then. His years of experience as a finisher has given him a keen insight into production problems and made him a first-rate trouble shooter as well as a salesman.—AL MATLOCK.

Mileage Estimator Cards Free to Auto Repaint Shops

Another one in a series of business stimulants produced from time to time for automobile repaint shops consists of a small card called "Mileage Estimator".

One side has two colums, one for noting amount of gas purchased, and the other for recording mileage traveled. At the bottom is shown a simple way of figuring the number of miles per gallon of gas. The other side has a 1941 calendar and a place for the shop name to be imprinted.

This estimator is printed in two colors on a sturdy lightweight cardboard and fits easily into a billfold. It was designed and produced by the advertising department of Minnesota Mining & Mfg. Co., St. Paul, Minn., and will be furnished automobile repainting shops in reasonable quantities with shop name and address imprinted.

Driers for "Soft Oil" Varnishes

The high cost and limited availability of tung oil has necessitated the formulation of varnishes with substitute oils of lesser reactivity.

On this subject, Nuodex Products Co., Inc., Elizabeth, N. J., announces publication of a 20-page booklet entitled "A study of the Use of Driers in 'Soft Oil' Varnishes."

The purpose of this investigation was to determine the most desirable driers with regard to vehicle stability and air-drying performance for the various varnish systems formulated with substitute oils to approximate tung oil vehicle performances.

Describes Pin Hole Detector

A pin hole detector for showing up holes in sheet metal is described in a new 4-page leaflet announced by the Westinghouse Elec. & Mfg. Co., East Pittsburgh, Penna. The description covers the light source, phototube housing, and control unit. Three methods of removing holes after detection are discussed. A copy of descriptive data 18-320 may be secured from department 7-N-20, Westinghouse Co.

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Increase the output of your furniture finishing room and lower production costs with WEAR MASTER SPEED DRY FILLER. It dries for sealing coat in *less* than 1 hour.

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1 Binks "T", 120-gals. Ditto, with air motor agitator, $160.00.
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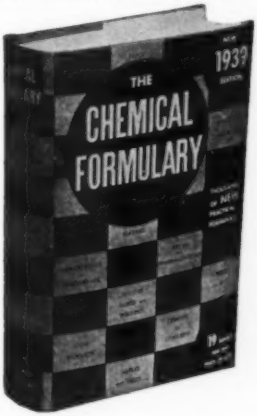

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They write us — "We wish to thank you for your favor of June 26th, advising the names and addresses of concerns interested in our products. As we have previously advised you the results which we have obtained from our advertising in your magazine have been very exceptional."—WNW, Sales Manager.

"We have been overwhelmed with inquiries on the product mentioned in your publication."—EWH.

"During the last few days we have received a considerable number of inquiries from people mentioning the item in May issue. We understand that our factory here already receives a copy of your magazine but apparently this is delivered to our Paint Foreman and after that we cannot seem to get hold of it. We understand how he would like to keep it on file, and would certainly appreciate it if you will please place this department on your mailing list for future copies."—EGMcL.

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